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STATEMENT OF POLICY

It shall be the public policy of the Territory of Guam to:

1. conserve, protect, maintain, and improve the quality of the Guam's waters for (drinking and food processing) human consumption, for the growth and propagation of aquatic life, for marine research and for the preservation of coral reefs and wilderness areas, and for domestic, agricultural, commercial, industrial, recreational and other legitimate uses;

2. provide that no pollutant discharged into any water, unless (a) the discharge first receives processing which will remove all harmful products or provide the control technology necessary to protect the designated beneficial uses of waters; (b) the discharge meets the effluent limitations established for that discharge; and (c) best management practices are applied to all non-point sources; and

3. provide for the prevention, abatement and control of new and existing water pollution sources including non-point sources.

4. maintain and improve the chemical, physical, and biological integrity of wetlands water quality as necessary to meet the Clean Water Act Section 101 (a), and to protect wetlands.

5. provide protection from point or non-point source discharges to wetlands in the same way as other surface waters.

6. provide protection from point and non-point discharges, including discharges from ponding basins and via sinkholes to groundwater.

Further, under the terms of the U.S. Water Pollution Control Act 92-500 as amended by all Public Laws through 1986:

1. it is the territorial goal that the discharge of pollutants into all territorial waters be eliminated;

2. it is the territorial goal that a water quality guideline be established and enforced, which

provide for the protection and propagation of fish, shellfish and other aquatic and marine life, and provide for safe public recreation in and on the water;

3. it is the territorial policy that the discharge of pollutants in harmful or hazardous amounts be prohibited; and

4. it is the territorial goal to eliminate all point source discharges to certain near-shore waters.

To assist in obtaining these goals, all discharges including non-point sources will be controlled (permitted) either through the National Pollutant Discharge Elimination System (NPDES) or through the Guam Environmental Protection Agency's local permit program.

Therefore, pursuant to the authority contained in the Guam Water Pollution Control Act (Section 47104 and 47108 of Chapter 47, Title 10 of the Guam Code Annotated), which authorized the formulation of standards of water purity and classification of waters according to their most beneficial uses, the Guam Environmental Protection Agency hereby adopts the following standards of water quality for Guam.

Waters whose existing quality is better than the established standards will be maintained at the same high quality.

Waters whose existing quality is less than the established standards for their use due to the presence of substances, conditions, or combinations thereof attributable to domestic, commercial and industrial discharges or agricultural, construction and other land-use practices, shall be improved to comply with the established standards. However, in such cases where the natural conditions are of lower quality than criteria assigned, the natural conditions shall constitute the water quality criteria. Water quality criteria in boundary areas shall be established so that the most stringent standard applies. When more than one set of Water Quality criteria apply, including overlap of category designations or at a boundary water between two categories, then the more stringent standard shall prevail.

The Administrator of the Guam Environmental Protection Agency may allow a lowering of water quality, only if it has been demonstrated to the Administrator with an Environmental Impact Statement (EIS) pursuant to the requirement of

Executive Order 90-10 (Appendix H) that a lowering of the water quality is the only alternative and is necessary as a result of essential social needs. It must also be demonstrated with the EIS that the lowered water quality will not interfere with or become injurious to any aquatic life or uses made of or potentially possible in the affected waters. A public hearing shall be conducted to give residents of the territory, primarily those residing in the affected area, opportunity to review and comment on the EIS.

All industrial, public or private projects or developments will be required, as part of the initial project design, to make provisions for the pollutant removal or control technology necessary to protect the designated use of receiving waters or maintain the existing high quality of the receiving waters.

Point Source discharges through storm drainage except for storm water is prohibited by these standards.

The purpose of these Water Quality Standards is to prevent degradation of water resources resulting from pollution sources. An Environmental Protection Plan (EPP) will be prepared by all developers, contractors, and others prior to construction initiation to ensure that water resources will not be degraded. This EPP will be submitted to the Guam Environmental Protection Agency for approval. Failure to comply with the EPP will result in a Stop Work Order and other actions, as deemed necessary, until compliance is achieved.

SECTION I

CATEGORIES OF WATERS

The following categories of water established under these standards relate to the different liquid components of the hydrologic cycle. All categories of water (Marine, Surface and Groundwater) are referenced on the Water Classification Map. Scaled down copies of these maps are included in these standards enabling readers to understand their relative position, application and use.

A. MARINE WATERS

This category includes all coastal waters off-shore from the mean high water mark, including estuarine waters, lagoons and bays, brackish areas, wetlands and other special aquatic sites, and other inland waters that are subject to ebb and flow of the tides. Refer to Water Classification Map.

CATEGORY M-1 EXCELLENT

Waters in this category must be of high enough quality to ensure preservation and protection of marine life, including corals and reef dwelling organisms, fish and related fisheries resources, and enable the pursuit of marine scientific research as well as aesthetic enjoyment. This category of water shall remain substantially free from pollution attributed to domestic, commercial and industrial discharges, shipping and boating, or agriculture, construction and other activities which can reduce the waters' quality. Furthermore, there shall be no zones of mixing within this category water.

CATEGORY M-2 GOOD

Water in this category must be of sufficient quality to allow for the propagation and survival of marine organisms, particularly shellfish, corals and other reef related resources. Other important and intended uses include mariculture activities, aesthetic enjoyment and compatible recreation inclusive of whole body contact and related activities.

CATEGORY M-3 FAIR

Water in this category is intended for general, commercial and industrial use. Specific intended uses include the following: shipping, boating and berthing, industrial cooling water, marinas, while allowing for protection of aquatic life, aesthetic enjoyment and compatible recreation with limited body contact.

B. GROUNDWATER

This major type of water encompasses all subsurface water and includes basal and parabasal water, perched water, all water below the groundwater table, water percolating through the unsaturated zone (Vadose Water), all saline waters below and along the perimeter of the basal fresh water body (freshwater lens), and water on the surface that has been collected with the specific intent of recharging or disposing of that water to the subsurface by means of injection, infiltration, percolation or other means. The Northern Guam Water lens which is the Principal Source Aquifer and any other groundwater resource as they are identified shall continue to receive protection under Guam's groundwater regulations.

CATEGORY G-1 RESOURCE ZONE

The primary use of groundwater within this zone is for drinking (human consumption) and this use must be protected. Virtually all water of the saturated zone of Guam is included. Specifically it includes all water occurring in the saturated zone below the groundwater table, all vadose water occurring in an unsaturated zone extending 100 feet (30.5 m) above any water table, or within 20 feet of the ground surface above all fresh groundwater bodies, all water of the basal and parabasal freshwater bodies, and all water of and below the freshwater/salt-water transition zone beneath the basal water body (Examples, Wells A-1, A-2, A-3, MJ1, & MJ5).

Because any water discharges within this zone will (by definition) be tributary to groundwater bodies which are actual or potential sources of fresh, potable water, no pollutant discharges to the ground-water within this zone will be allowed.

CATEGORY G-2 RECHARGE ZONE

Water within this zone is tributary to, replenishes, and recharges the Category G-1 groundwater and must be of drinking water quality before it enters the Resource Zone. All water discharges within the Recharge Zone must receive treatment to the degree necessary to protect the underlying Category G-1 groundwater from any contamination.

Category G-2 is divided into two distinct sub-categories based upon the boundaries of the Groundwater Management Protection Zone (GWMPZ).

Category G-2a exists within the GWMPZ and extends from the ground surface to the top of the G-1 zone.

Category G-2b exists only outside the GWMPZ and includes all waters which are collected and recharged or disposed of within a zone which is bounded above by G-3 and below by G-1. Vertically, this zone extends 20 feet below the ground surface to the upper surface of the Category G-1 waters. Input to ground water within this zone occurs primarily through storm water injection wells.

It is recognized that water within this zone will percolate through soil/rock media before reaching the Resource Zone. In this way it may undergo some degree of natural treatment consisting of filtration and subsequent purification. However, the degree of treatment is not easily demonstrated. Thus, due to the need to protect G-1 waters and considering the difficulty in tracing pollutants reaching the G-1 zone to a particular source, discharge limitations have been established to regulate discharges to the G-2a and G-2b zone. All discharges must meet the discharge limitations established in Table III (Appendix "J).

All discharges within this zone may be required by the Agency to obtain discharge permits under these standards.

CATEGORY G-3 BUFFER ZONE

Category G-3 exists only outside the GWMPZ and includes all waters which are collected and disposed of or recharged at or near the existing groundwater supply. Vertically, the zone for this category extends from the surface to 20 feet (6 m) below the surface. Disposal methods which may result in discharges to groundwater within this zone include, but are not limited to, ponding basins, rapid infiltration, slow rate land treatment, surface or spray irrigation and all subsurface discharges (seepage, leaching).

For reasons similar to those discussed for Category G-2a and Category G-2b, discharge limitations for G-3 are also established in Table III (Appendix J). Discharges equal to or less than 3,000 gallons per day (gpd) within the G-3 zone are designated by G-3a. Water quality criteria for all discharges within zone G-3 which are greater than 3,000 gpd are designated G-3b. This differentiation in criteria addresses the fact that minor discharges typified by small scattered individual dwelling units probably have less adverse impact on underlying groundwater than major point source discharges and thus are allowed less restrictive water quality limits (i.e. equivalent to primary treatment).

All discharges within this zone may be required by the Agency to obtain discharge permits under these standards.

C. SURFACE WATERS

This Category includes all of surface fresh-water and includes, (1) waters that flow continuously over land surfaces in a defined channel or bed, such as streams and rivers, (2) standing water in basins such as lakes, wetlands, marshes, swamps, ponds, sinkholes, impoundments, and reservoirs either natural or man-made and (3) all waters flowing over the land as runoff, or as runoff confined to channels with intermittent flow. Refer to the Water Classification Map. Waters under these category are those waters which are collected with specific intent of disposal by recharging them into the ground (i.e.,ponding basin).

Category S-1 HIGH

Surface waters in this category is used for drinking water resources, conservation of wilderness areas, propagation and preservation of aquatic life and aesthetic enjoyment. It is the objective of these standards that these waters shall be kept free of substances or pollutants from domestic, commercial and industrial discharges, or agricultural activities, construction or other land-use practices that may impact water quality. No pollutant discharges will be permitted into S-1 waters via discharge or as a result of land uses adjacent to S-1 waters. Mixing zones will not be allowed within the boundaries of Category S-1.

Category S-2 MEDIUM

Surface water in this category is used for recreational purposes including water contact recreation, for use as potable water supply after adequate treatment is provided, and propagation and preservation of aquatic wildlife and aesthetic enjoyment.

Category S-3 LOW

Surface water in this category is primarily used for commercial, agricultural and industrial activities. Aesthetic enjoyment and compatible recreation are acceptable in this zone, as well as maintenance of aquatic life. Compatible recreation may include limited body contact activities. All discharges within this zone which are not required to have construction and/or discharge permits under existing regulations may be required by this Agency to obtain such permits under these regulations.

SECTION II

WATER QUALITY CRITERIA

A. GENERAL CRITERIA APPLICABLE TO ALL TERRITORIAL WATERS

All waters shall meet generally accepted aesthetic qualifications, shall be capable of supporting desirable aquatic life, and shall be free from substances, conditions or combinations thereof attributable to domestic, commercial and industrial discharges or agricultural, construction and land-use practices or other human activities that:

1. cause visible floating materials, debris, oils, grease, scum, foam, or other floating matter which degrades water quality or use;

2. produce visible turbidity, settle to form deposits or otherwise adversely affect aquatic life;

3. produce objectionable color, odor, or taste, directly or by chemical or biological action;

4. injure or are toxic or harmful to humans, animals, plants or aquatic life; and

5. induce the growth of undesirable aquatic life.

Analytical testing methods for these criteria shall be in accordance with the most recent editions of Standard Methods for the Examination of Water and Wastewater (APHA, AWWA, WPCF), Methods for Chemical Analysis of Water and Wastes (U.S. Environmental Protection Agency), and other methods acceptable to GEPA and possessing adequate procedural precision and accuracy.

Effects of high temperature, biocide, pathogenic organisms, toxic, corrosive, or other deleterious substances at levels or combinations sufficient to be toxic or harmful to human, animal, plant or aquatic life or in amounts sufficient to interfere with any beneficial use of the water, shall be evaluated as a minimum, by use of a 96-hour bioassay as described in the most recent edition of the EPA Manual or ASTM. Survival of test organisms shall not be less than that of controls which utilize appropriate water. Failure to determine presence

of toxic substances by this method shall not preclude determination of excessive levels of toxic substances on the basis of other criteria or methods.

B. SPECIFIC NUMERICAL WATER QUALITY CRITERIA

1. Microbiological Requirements

	Applicable to	
Concentrations of total coliform bacteria at any point shall not be increased from natural conditions at any time.	M-1	S-1
The fecal coliform bacteria count shall not exceed an arithmetic mean of 70 per 100 ml during any 30-day period nor shall any sample exceed 400 per 100 ml at any time.	M-2	S-2
The fecal coliform bacteria count shall not exceed an arithmetic mean of 200 per 100 ml during any 30-day period nor shall any sample exceed 400 per 100 ml at any time.	M-3	S-3

To determine compliance with the above microbiological requirements where a "30-day period" is specified, a minimum of four samples shall be collected at approximately equal intervals.

NOTE: Where shellfish are collected for human consumption, the microbiological standard for M-1 waters shall apply.

2. pH

The ambient pH of fresh and estuarine waters and wetlands ranges from 6.5-8.5 and 7.0-9.0 for marine waters. Variations of more than 0.5 pH units from ambient shall not be allowed	M-1 M-2 M-3	S-1 S-2 S-3

except due to natural causes.

3. Nutrients

Phosphorus:	Applicable to	
Orthophosphate (PO_4-P) shall not exceed 0.025 mg/l	M-1	S-1
Orthophosphate (PO_4-P) shall not exceed 0.05 mg/l	M-2	S-2
Orthophosphate (PO_4-P) shall not exceed 0.10 mg/l	M-3	S-3
Nitrogen:		
Nitrate-nitrogen (NO_3-N) shall not exceed 0.10 mg/l	M-1	S-1
Nitrate-nitrogen (NO_3-N) shall not exceed 0.20 mg/l	M-2	S-2
Nitrate-nitrogen (NO_3-N) shall not exceed 0.50 mg/l	M-3	S-3

Guam's groundwater has nitrate-nitrogen concentrations up to 5 mg/l. It is the intent of these standards to require secondary wastewater treatment. Treatment in excess of secondary treatment may be required and reviewed on a case by case basis. Levels of nutrients in receiving waters will be used as a guide in determining if treatment in excess of secondary treatment is required. Point source discharges will be regulated by permits specifying effluent standards and operational requirements.

Activities which may result in non-point discharges of nutrients shall be conducted in accordance with the best management practices reasonably determined by the Agency to be necessary to preclude or minimize such discharges of nutrients,

not to allow levels beyond those explicitly stated above.

In all cases, discharges containing nutrients, primarily nitrogen and/or phosphorous shall be treated to the extent necessary to prevent damage to coral reefs or growth of aquatic species which create a public nuisance or interfere with beneficial uses as defined in Section I.

4. Dissolved Oxygen — Applicable to

Concentrations of dissolved oxygen shall not be decreased below 75 percent saturation at any time, as influenced by salinity or naturally occurring temperature variations. Where natural conditions cause lower dissolved oxygen levels, controllable water quality factors shall not cause further reductions. — All waters of the Territory

Table I. Saturation D.O.

Freshwater			Marine Water and Wetlands		
Sat.	75% Sat.	Temp.	Salinity	Sat.	75% Sat.
mg/l	mg/l	C	ppt	mg/l	mg/l
7.6	5.6	30	32	6.2	4.6
8.2	6.2	26	32	6.7	5.0

5. Salinity

Marine-Waters: No alterations of the marine environment shall occur that would alter the salinity of marine or estuarine waters more than +10% of the ambient conditions, except when due to natural conditions. — All Marine (M-1, M-2, M-3), Estuarine Waters and Wetlands of the Territory.

	Fresh-Water: The maximum allowable amount of chlorides and sulfates shall be 250 mg/l, and the total dissolved solids shall not exceed 500 mg/l or 133% of the ambient condition. The salinity of fresh-water sources and wetlands shall not be increased more than 20% above ambient by discharges of saline water.		S-1 S-2 S-3
6.	Total Filterable Suspended Solids	Applicable to	
	Concentrations of suspended matter at any point shall not be increased from ambient conditions at any time, and should not exceed 5 mg/l except when due to natural conditions.	M-1	S-1
	Concentrations of suspended matter at any point shall not be increased more than 10% from ambient at any time, and should not exceed 20 mg/l except when due to natural conditions.	M-2	S-2
	Concentrations of suspended matter at any point shall not be increased more than 25% from ambient at any time, and should not exceed 40 mg/l except when due to natural conditions.	M-3	S-3
7.	Turbidity		
	Turbidity at any point, as measured by nephelometric turbidity units (NTU), shall not exceed 0.5 NTU over ambient conditions except when due to natural conditions.	M-1	S-1
	Turbidity values (NTU) at any	M-2	S-2

point shall not exceed 1.0 NTU over ambient conditions except when due to natural conditions. Since debris, rapidly settling particles and true color give low readings when using Nephelometric methods in making turbidity determinations and one or more of these conditions may exist in marine and surface water, secchi disc determinations will be used when these conditions exist. Secchi disc visibility shall not decrease by more than 5 meters from ambient conditions except when due to natural conditions.	M-3	S-3
8. Radioactive Materials Discharges of radioactive materials at any level into any waters of the territory is strictly prohibited.	All Waters of the Territory	
9. Temperature Water temperature shall not be changed more than 1.0 degree centigrade (1.8 degree fahrenheit) from ambient conditions.	All Waters of the Territory	
10. Concentrations of Oil or Petroleum Products. Those that exceed the limits described below are unacceptable.	M-1 M-2 M-3	S-1 S-2 S-3

a) Detectable as a visible film, or sheen, or results in visible discoloration of the surface with a corresponding oil or petroleum product odor; or

b) causes damage to fish, invertebrates or objectionable degradation of drinking water quality; or

c) forms an oil deposit on the shores or bottom of the receiving body of water.

11. Pesticides

Concentrations of pesticides shall not exceed one percent of the 24-hour LC50 value determined using the receiving water in question and the most sensitive species of aquatic organisms affected.

Where the concentration based on the LC50 data exceeds the recommended maximum concentrations, the maximum concentrations shall constitute the criteria.

For the listing of all pesticides (Organo-chlorides, Organophosphates, Carbamates, Herbicides, Fungicides, Defolliants, and Botanicals) please refer to the U.S. Water Quality Criteria "Blue Book."

Note:

The setting or publishing of maximum concentrations (limits) for specific pesticides and other toxics should in no way be construed as official approval or authorization for their use where such use is contrary to U.S. Environmental Protection Agency or other Federal or local regulations.

12. Toxic Substances

In order to provide maximum protection for the propagation of fish and wildlife, concentrations of toxic substances (persistent or non-persistent, cumulative or non-comulative); (a) shall not exceed 5 percent (0.05) of the 96-hour LC50 at any time or place, nor should the 24-hour average concentration exceed one percent (0.01) of the 96-hour LC50 or, (b) shall not exceed levels calculated by multiplying the appropriate application factor by the 96-hour LC50 values determined by using the most sensitive species of aquatic organism affected. Whichever value (a or b) is less shall be the maximum allowable concentration, unless this value exceeds the Maximum Numerical Limit, then the numerical limit shall constitute the maximum allowable concentration.

Criteria for the 126 Section 307 (A) Toxic Pollutants, listed by the U.S. Environmental Protection Agency, to which this standard applies, are incorporated by reference into the Guam Water Quality Standards. A list of some of the Toxic Pollutants is given in Appendix A. Absence from this list does not mean a substance is non-toxic, as it may be added later. All effluents containing materials attributable to the activities of man shall be considered harmful and not permissible until acceptable bioassay tests have shown otherwise. At the request of the Administrator, it is the obligation of the person producing the effluent to demonstrate that it is harmless.

In addition, effluent limits based upon acute and/or chronic toxicity tests of effluents may be prescribed by the Administrator. As a minimum, compliance with the standard as stated in the previous sentence shall be evaluated with a 96-hour bioassay or short-term method for estimating chronic toxicity. References for these methods are: EPA/600/4-89/011 Short-Term Methods for Estimating the Chronic Toxicity of Effluents and Receiving Waters to Freshwater Organisms, March, 1989; or EPA/600/4-85/013 Methods for Measuring the Acute Toxicity of Effluents to Freshwater and Marine Organisms, Cincinnati, Ohio, EMSL, March, 1985; or EPA/600/4-87/028 Short-Term Methods for Estimating the Chronic Toxicity of Effluents and Receiving Waters to Marine and Estuarine Organisms, Cincinnati, Ohio, EMSL, May 1988. Numerical receiving water limits including EPA's Section 304(a) criteria for Section 307(a) toxic pollutants (Appendix A) as cited at 53 FR 177 and summarized in EPA 440/5-86-001 Quality Criteria for Water 1986, Washington D.C., OWRS, May 1, 1986, as amended by Update #1, September 16, 1986, and Update #2, May 1, 1987 ("Quality Criteria for Water") will apply. The numeric water quality standards from this reference are those for the parameters that are the Section 307 (a) priority pollutants (Appendix A). These standards are intended to protect both aquatic life and human health. For protection of aquatic life, they are maximum levels not to be exceeded and GEPA will utilize the national criteria guidance four-day average concentration limits or 24-hour average

limits, whichever is most current, as standards. For protection of human health in fresh surface waters, the GEPA will apply the national criteria guidance for ingestion through water and contaminated aquatic organisms as 30-day average limits. For other territorial waters, the GEPA will apply the national criteria guidance for ingestion through contaminated aquatic organisms alone as 30-day average limits. For those priority pollutants that are carcinogens, the 10 to the minus sixth power risk level will be used (10^{-6}).

In addition to the 126 listed toxics, Table II shows the maximum allowable concentrations and application factors for additional toxic substances.

TABLE II. ADDITIONAL TOXIC POLLUTANTS NOT INCLUDED IN APPENDIX A.

* Substance	Maximum Numerical Limit		Application Factors
	Marine Water	Fresh Water	
Aluminum	0.20 mg/l	1.0 mg/l	0.01
Ammonia	0.02 mg/l		0.05
Barium	0.50 mg/l		0.05
Boron	5.00 mg/l		0.10
Bromine (free	0.10 mg/l		-
as Bromate)	100.00 mg/l		-
Chlorine (Total Residual)	0.00 mg/l	0.01 mg/l	0.1
Fluoride	1.50 mg/l	0.80 mg/l	0.1
Iron	0.05 mg/l	3.00 mg/l	-
Manganese	0.02 mg/l		0.2
Molybdenum	-		0.0
Sulfide	0.005 mg/l		0.1 (Applicable to 20-day LC data)
TBT	(See Appendix I)		
Uranium	0.00 mg/l		0.01
Vanadium	-		0.05

* Total amounts in indicated chemical state of form.

1 Greater concentrations of Chlorine may be used to treat a source of drinking water in order to meet the requirements of Subsection II.B.1 of these standards.

2 Naturally occurring Uranium has been reported in concentrations of 0.003 mg/l (seawater) and 0.00004 mg/l (river water)

Note: Whenever natural concentrations of any toxic substance or element occur and exceed the limits established in these standards, this greater concentration shall constitute the limit, provide that this natural concentration was not directly affected by man-induced causes.

SECTION III

EFFLUENT LIMITATIONS

A. GENERAL CRITERIA

The Agency reserves the right to amend or extend the following criteria as improved standard methods are developed or revisions consistent with the enhancement of water quality are justified:

1. All sewage shall be treated to the degree required by the Agency to achieve standards of water quality prior to being discharged to the waters of the Territory. Industrial waters and other wastes shall also be treated to the degree required by the Agency.

2. Dilution of the effluent from any source as a sole means of treatment is not acceptable as a method of treatment of wastes in order to meet the standards set forth in this Section. Rather, it shall be the obligation of any person discharging pollutants of any kind to the waters of the Territory to provide the best pollutant removal or control consistent with technological feasibility, economic reasonableness, and sound engineering judgement. In making a determination as to what degree of treatment is the best pollutant removal or control within the meaning of this paragraph, any person shall consider the following:

   a) the degree of waste reduction that can be achieved by process change, improved housekeeping and recovery of individual waste components for reuse; and

   b) whether individual process wastewater streams should be segregated or combined.

3. Measurement of pollutant concentrations to determine compliance with the effluent limitations shall be made by the discharger at the point immediately following the final treatment process and before mixing with other waters. Points of measurement shall be designated by the Agency in an individual permit, after consideration of the elements contained in this section. If necessary, the concentrations so

measured shall be recomputed to exclude the effect of any dilution that is improper under this standard.

4. Every person discharging effluent to the waters of the Territory shall submit operating reports to the Agency at a frequency to be determined by the Agency. Such reports shall contain information of those physical, chemical and bacteriological parameters which shall be specified by the Agency; and any additional information the Agency may reasonably require.

5. In addition to other requirements no effluent shall, alone, or in combination with other sources, cause a violation of any applicable Water Quality Standard. If the Agency finds that a discharge which complies with treatment requirements under the Authority of Section III-A of these standards would cause or is causing a violation of Water Quality Standards, the Administrator shall take appropriate action under Section 47109 of the Water Pollution Control Act to require the discharge to meet whatever effluent limits are necessary to ensure compliance with the Water Quality Standards. When such a violation is caused by the cumulative effect of more than one source, several sources may be joined in a schedule of compliance. Measures necessary for effluent reductions will be determined on the basis of technical feasibility, economic reasonableness, and fairness to all dischargers.

6. Any existing point source discharges to near shore waters of M-1 and M-2 classifications as of the effective date of these standards shall submit to the Administrator for approval a plan and schedule for elimination of the discharge to near shore waters by December 31, 1998. Any such plan shall consider all alternate disposal options and give preferential consideration to eliminating all point source discharges to the waters of the Territory. After approval of the plan by the Administrator, the Administrator shall not certify compliance with these standards to the USEPA in connection with issuance or reissuance of a NPDES permit for the discharge unless the permit includes the aforementioned plan and schedule.

7. The Administrator shall not certify compliance with these standards to the USEPA in connection with issuance of a NPDES permit for a new discharge to near shore waters.

B. MIXING ZONES IN RECEIVING WATERS

Whenever a mixing zone is allowed by the Agency for the mixture of an effluent with its receiving waters, the zone in which mixing occurs will not adversely affect the designated uses of the receiving waters. If mixing zones are used, Water Quality Standards for a receiving water must be met at every point at the boundaries of the designated mixing zone. The following criteria apply to all mixing zones:

1. Whenever mixing zones are allowed, zones of passage, i.e., continuous water routes of the volume, area, and quality necessary to allow passage of free-swimming and drifting organisms with no significant effects produced on their populations, shall be provided.

2. Where two or more mixing zones are in close proximity, they shall be so defined that a continuous zone of passage for aquatic life is available.

3. Biologically important areas, including spawning and nursery areas, shall be protected.

4. No criteria shall be set aside in the mixing zone which shall cause conditions in the mixing zone to become lethal to aquatic life and wildlife which may enter the zone or become injurious to human health in the event of a temporary exposure.

5. The area or volume of an individual mixing zone shall be limited to an area or volume that will minimize impacts on uses.

6, The discharge shall not violate the basic standards applicable to all waters (Section II A and Section III E) nor shall it unreasonably interfere with any actual or probable use of the water within the mixing zone.

7. For those water quality criteria eligible for a mixing zone, alternate limits will be established if

the limits in II-B are to be revised in the zone of mixing.

8. Mixing Zones may be allowed on a case by case basis upon approval of an Environmental Impact Statement.

C. MIXING ZONES FOR NON-THERMAL DISCHARGES

Non-thermal discharges shall be permitted by the National Pollutant Discharge Elimination System (NPDES) permit process. Mixing zone for non-thermal discharge may be granted only after careful analysis of the nature of the effluent and a thorough study to assess the consequences of the effluent upon the environment. Mixing zones for non-thermal discharges shall be based on the following models, taking into consideration the criteria in Section III(B) above.

1. Mixing Zones for Non-thermal Discharges

For non-thermal discharges into streams and rivers, the mixing zone, at the point of discharge, is limited to 25% of the cross sectional area of the stream at the minimum flow at which the appropriate Water Quality Standard can be met by thorough mixing of the effluent with the receiving waters.

The length of the mixing zone shall extend downstream no more that 5 times the natural width of the stream at the point of discharge at the minimum flow condition.

The applicable water quality standard must be achieved at all points outside the mixing zone.

Mixing zones will not be permitted in standing bodies of water.

2. Mixing Zones for Non-thermal Discharges into Coastal Waters.

For non-thermal discharges to coastal waters, the mixing zone shall be equal in depth to the depth of the water over the diffuser, in width to twice the depth of the water plus the width of the diffuser, and in length to twice the depth of the water plus the length of the diffuser, with the diffuser geographically centered within the mixing zone.

All discharges to marine waters will comply with the ocean discharge Criteria promulgated under Section 403 (6) (c) of the Federal Clean Water Act.

D. MIXING ZONES FOR THERMAL DISCHARGES

Thermal discharges pertain to effluent water with a temperature component either above or below ambient conditions of the receiving body of water. All thermal discharges, existing or proposed, into receiving bodies of water located on M-2 and M-3 shall be subject to criteria established in Section 316 (a) of the Federal Water Pollution Control Act (FWPCA), Public Law 95-217. Thermal discharges shall be subject to the National Pollutant Discharge Elimination System (NPDES) permit process. Mixing zone for thermal discharge may be granted only after careful analysis of the nature of the effluent and a thorough study to assess the consequences of the effluent upon the environment.

1. All above-Ambient Discharges:

a) Shall conform to a zone of mixing defined for that particular discharge on a case-by-case basis. This zone of mixing shall be defined by the following references or other references depicting appropriate thermal mixing zone models.

- EPA/505/2-90-001, PB91-127415, March 1991 Technical Support Document For Water Quality-based Toxic Control.

And take into consideration the following criteria:

- Time of exposure
- Temperature of effluent
- Depth of discharge
- Type of environment
- Volume of discharge
- Mass of pollutant rate of critical materials
- Aesthetics and the assessment of damage to

- Mass of pollutant rate of critical materials

- Aesthetics and the assessment of damage to biota on the population basis.

Final authority in defining a zone of mixing rests with the GEPA.

b) Shall not increase the temperature of the receiving body of water to cause substantial damage or harm to the flora and fauna or interfere with the beneficial uses assigned therein.

c) Shall comply with all other water quality criteria as defined in these standards, and specific criteria established in the discharge permit.

d) These zones of mixing shall be monitored by the discharger on a regular schedule established by the NPDES Permit, to ensure compliance with established criteria.

e) If the Agency, pursuant to notice and opportunity for public hearings, finds evidence that a discharge has caused substantial damage, it may require conversion of such discharge to an approved alternative method. In making such a determination, the Agency may consider:

(1) The nature and extent of damage to the environment.

(2) Projected lifetime of discharge.

(3) Adverse economic and environmental impacts, marine and terrestrial, resulting from such conversion.

(4) All available data, reports, surveys and projects related to the discharge.

(5). Such other factors which may prove to be appropriate.

2. Above-Ambient Discharges in Existence Prior to Approval of These Standards.

a) Shall be given special attention when defining a zone of mixing. All criteria established for part D-1 above, shall apply with special emphasis on specific criteria listed in part D-1a.

b) Description of mixing zones for Tanguisson and Piti/Cabras Power Plants.

(1) Tanguisson Power Plant Zone of Mixing

The zone of mixing for the Tanguisson Power Plant is defined as a rectangle of approximately 10,000 sq. m. with the following reference points.

Northern boundary - North side of intake channel

South boundary - 1969 ft (600 m) south of intake channel

Eastern boundary - Shoreline at mean high tide

Western boundary - 591 ft (180 m) off-shore to a depth beyond the reef margin of about one meter which is the top of the zone of passage.

(2) Piti/Cabras Zone of Mixing

The zone of mixing for the Piti/Cabras Power Plants combined is the Piti Channel, from the power plants to a distance 300 feet back from where the channel joins the harbor proper and from there to a depth of about one meter or 3.28 feet to a line from the GORCO Pier and the Navy Fuel Pier on Dry Dock Island.

(3) Below-Ambient Discharges.

All below-ambient discharges shall follow the same guidelines set down for thermal discharges and be evaluated on a case-by-case basis.

E. PROHIBITED DISCHARGES

1. No person shall cause or permit:

a) the discharge of any wastes or wastewaters regardless of volume, unless authorized by the Administrator under Section 47106 of the Water Pollution Control Act or unless subject to control or modification required by a schedule of compliance established by the GEPA Board of Directors;

b) the discharge of any pollutant in toxic amounts, including the substances which may accumulate to toxic amounts, during the expected life of organisms in the receiving water, which are lethal to, or which produce deleterious genetic, physiological, or behavioral effects in the organisms;

c) the discharge of any radiological, chemical, biological warfare agents, or radioactive wastes and contaminated radioactive materials from research and medical facilities.

d) any discharge which would substantially impair anchorage and navigation, including any discharge which the Secretary of the Army, acting through the Corps of Engineers, finds would result in this damage;

e) any discharge which the Administrator of the United States Environmental Protection Agency has objected to in writing pursuant to any right to object provided by the Federal Water Pollution Control Act, as amended;

f) any discharge which is in conflict with an approved Territorial plan;

g) the discharge of sewage from vessels while moored, berthed or docked, or underway in waters of the Territory except through a properly functioning Coast Guard approved type II Marine Sanitation Device; and

h) any pollutant discharge into M-1, S-1, or G-1 waters as defined in Section I of these Standards.

i) any discharge of visible floating materials including scum and foam.

2. All vessels exceeding 400 gross tons which are berthed or docked in the waters of the Territory, without fully functional U.S. Coast Guard approved oil pollution prevention devices (for longer than 72 hours detention) must be completely encircled with flotation booms to contain any discharged oil. The Administrator may require any vessel, regardless of gross tonnage, operating ability, oil pollution prevention devices, duration of moorage or dockage time, to be completely encircled with floating booms if in this opinion such measures are necessary to control potential oil discharges into Territorial waters including, but not limited to, instances where excessive oil is present on the vessel's deck or in the vessel's bilges; when major machinery repairs are undertaken; or when a vessel cannot close its scuppers effectively during bunkering operations.

F. LAND DISPOSAL OF TREATED WASTEWATERS

1. Approval of land disposal of treated liquid wastewater requires that:

a) wastewaters shall be restricted to the premises of the disposal site;

b) provision shall be made by the discharger for monitoring the quality of the effluent with the exception of single family dwelling units unless there are more than five (5) units connected to a single system, or the Agency requires it after identifying a potential hazard;

c) all monitoring data and reports required under a discharge permit shall be submitted to the Agency;

d) land disposal shall not create a public health hazard, a nuisance condition or an air pollution problem;

e) these standards do not solely govern water/ wastewater to be reused to produce products which may end up in the human food chain, such as crops, animal feed or animal products. The

Agency will consider such reuse on a case-by-case basis using available guidelines on best available technology.

2. The evaluation for a permit for land treatment and/or disposal of wastewater(s) should include, but not necessarily be limited to consideration of the following items:

   a) the type of wastewater(s) proposed for disposal. (The wastewater(s) should be biologically degradable but other wastewater(s) will be considered provided it can be shown that disposal of the wastewater(s) will not adversely affect the designated use of the waters underlying or adjacent to the disposal site).

   b) the nature of the earth material(s) underlying the disposal site. (The applicant must provide positive assurance that the earth material(s) underlying the proposed disposal site will not allow movement of pollutants into underlying groundwaters so as to exceed ground water standards.)

   c) the vegetative cover of the disposal site. The selection of a vegetative cover should reflect the disposal season(s), the duration and frequency of disposal and the response of the vegetative cover to the wastewater. If the wastewater proves to be deleterious to vegetative cover, a higher degree to treatment or another means of disposal will be required.

3. Improperly and/or inadequately treated sewage shall not be allowed to accumulate on the ground surface in such a manner that it may create a health hazard and/or a nuisance condition.

4. It shall be a violation of these standards to store, dispose of, or allow to accumulate any solid waste or other deleterious material adjacent to or in the immediate vicinity of any streams, rivers, wetlands, or marine waters in a manner that such material will directly or indirectly enter such waters or wetlands. Such

material shall include, but not be limited to sewage sludge, trash, rubbish, garbage, oil, gasoline, chemicals, sawdust, accumulations of manure, and stockpiles of soil.

5. In case of accidental spills of deleterious materials, responsible persons in charge shall immediately notify the Administrator of any such spills and make every reasonable effort to contain spilled material in such a manner that it will not pollute waters of the Territory.

6. Wastewater discharged to disposal wells for underground disposal shall receive, prior to discharge, treatment necessary to protect potable water resources and any adjacent marine waters or fresh surface waters. See Table III (Appendix J).

G. EFFLUENT DISCHARGE LIMITATIONS FOR GROUNDWATER CATEGORIES G-2a, G-2b, AND G-3

Any water percolating to the groundwater table is in the state of transition from being a discharge to becoming part of a useable body of water. Because of the difficulty involved in tracing the source and eliminating pollutants after they have reached the groundwater table, limitations for discharges to G-2a, G-2b, and G-3 waters are established in Table III (Appendix J). This Table provides criteria for some common water quality parameters. The Agency will set limits for other parameters as necessary on a case-by-case basis.

The Agency may allow the application of G-3a discharge limitations to flows greater than 10,000 gallons per day if it can be shown by an engineering feasibility study that there will be no significant adverse effect on the waters of the Territory.

The Agency also reserves the right to set more stringent standards than those shown in Table III (Appendix J) if there is reason to believe that significant environmental damage will result from any discharge. Effluent limitations have not been set for G-1 waters because the Agency prohibit such discharges.

H. PETROLEUM STORAGE FACILITIES

Any storage facility containing petroleum products or hazardous substances not directly adjacent to navigable waters and below the SPCC capacity requirements of 600 gallons shall be provided with secondary containment to protect Guam's groundwater resources from potential threat to oil or hazardous substances discharges. In case of spills, the Federal Spill Prevention Control counter measure requirements shall be adhered to.

CHAPTER IV

DEFINITIONS

The following definitions are used for the purpose of clarification where such terms, phrases and words are used or implied in the text of these Water Quality Standards.

ADMINISTRATOR: Primary responsible person of the Guam Environmental Protection Agency.

ADVERSELY AFFECT: Damage to the waters of the Territory of Guam that result in, but are not limited to any of the following:

1. Substantial increase or decrease in abundance or distribution of any species or representative of the highest community development achievable in receiving waters of comparable quality.

2. A substantial decrease in abundance or diversity of indigenous species.

3. Change(s) in community structure to resemble a simpler successional stage than is natural for the locality and season in question.

4. Degradation in appearance, odor or taste of the waters.

5. Elimination of an established or potential economic or recreational use of the waters.

6. Reduction of the successful completion of life cycles of indigenous species, including those of migratory species.

7. Substantial reduction of community heterogeneity or trophic structure.

AGENCY: Guam Environmental Protection Agency (GEPA).

AMBIENT: Existing conditions in surrounding waters taking into account established human activity at that time and place (should approach natural conditions that would be present without the presence of human activities).

AMBIENT MONITORING: Monitoring within lakes, rivers, estuaries, wetlands, springs, swamps, mangroves, etc., to determine existing conditions of the natural system.

AQUIFER: A water-bearing stratum of permeable rock, sand or gravel.

BASAL GROUNDWATER: Fresh groundwater floating directly on sea water.

BEST AVAILABLE TECHNOLOGY: Subject to economic and engineering feasibility limitation, BAT should incorporate the best available current technology with a capacity up to and including no discharge of pollutants. Considerations include the age of the equipment and facilities involved; the process used; the engineering aspects of applying various types of control techniques; process changes; the cost of achieving the effluent reduction resulting from applying the technology; and non-water quality environmental impacts.

BEST MANAGEMENT PRACTICE: Application of the most current and effective techniques, methods and procedures, practices or design and performance standards for a specific purpose.

BEST POLLUTANT REMOVAL OR CONTROL: A feasible process which, as demonstrated by general use, demonstration process or pilot plants represents good engineering practice at a reasonable cost at the time a discharge permit is issued by the Agency.

BIOTA: The animal, plant and microbial life of a region.

BOUNDARY: The physical interface between adjoining discreet areas. A fine line as applied to groundwaters, but as applied to surface and marine waters the line may shift due to storm conditions, tides, water current changes and surface winds.

COASTAL WATERS: Includes near-shore, off-shore and estuary waters within the jurisdiction of the Territory of Guam.

COLIFORM BACTERIA:

a. TOTAL COLIFORM BACTERIA: All of the aerobic and facultative anaerobic gram-negative, non spore-forming, rod-shaped bacteria that ferment lactose broth with gas formation within 48 hours at 35 degrees Centigrade +/- 0.5 degrees Centigrade.

b. FECAL COLIFORM: That portion of the coliform group which is present in the gut or the feces of warm-blooded animals. It generally includes organisms capable of producing gas from lactose broth in a suitable culture medium within 24 hours at 44 degrees Centigrade +/- 0.2 degrees Centigrade. This elevated temperature will eliminate non-fecal and non-coliform organisms and selectively culture fecal coliform bacteria.

COMMUNITY: An association of living organisms in a given area or region in which the various species are more or less interdependent upon each other.

CONTROLLABLE WATER QUALITY: The aspects of water quality that can be protected or modified by human activity.

CONSERVATION: Planned management of a natural resource to prevent exploration, destruction or neglect.

CREATED WETLAND: A wetland at a site where it did not formerly occur. Created wetlands are designed to meet a variety of human benefits including, but not limited to, the treatment of water pollution discharges (e.g., municipal wastewater, storm water, etc.) and the mitigation of wetland losses permitted under Section 404 of the Clean Water Act. This term encompasses the term "constructed wetland" as used in other EPA guidance and documents. Created wetlands designed and specifically created and used solely for the purpose of wastewater treatment do not qualify as waters of the territory of Guam. The discharges from the created wetlands which do not qualify as waters of the territory must meet applicable water quality standards for the receiving waters and will be treated on a case-by-case basis.

DEVELOPMENT: Means the placement or erection of any solid material or structure, including structures on pilings; discharge or disposal of any dredged

material or of any gaseous, liquid, solid or thermal waste; grading, removing, dredging, mining or extraction of any materials; change in the density or intensity of use of land, including, but not limited to, subdivision of land and any other division of land including, lot parceling; change in the intensity of use of water, ecology related thereto or of access thereto; construction or reconstruction, demolition or alteration of the size of any structure, including any facility of any private, public or municipal utility, and the removal of significant vegetation.

DIRECT MOVEMENT: The movement of effluent through the soil and underlying rock strata in such a manner that pollutants which would adversely impact on the designated uses of the receiving water are not removed.

DISCHARGE: The direct or indirect outflow of wastewater, substance or material from any domestic, commercial, industrial, agricultural or any other source into air, land and waters of the Territory of Guam. The term "discharge" includes either the discharge of a single pollutant or the discharge of multiple pollutants.

DISCHARGER: Any person or entity that discharges any wastewater, substance or material into the waters of the Territory of Guam whether or not such substance causes pollution.

EFFLUENT: Solid, liquid or gaseous material discharged into the environment.

EFFLUENT LIMITATION: Any restriction or prohibition established under Territorial or Federal Law including, but not limited to parameters for toxic and non-toxic discharges, standards of performance for new sources, or ocean discharge criteria. The restrictions or prohibitions shall specify quantities, rates and concentrations of chemical, physical, biological and other constituents which are discharged to waters of the Territory of Guam.

EMERGENCY PLAN: The corrective procedure (SPCC) is to be followed in the case of oil or toxic substance spills, or in the case of damage caused by natural phenomena

whether on-land or off-land. This definition covers spills whether they are caused by small quantity generators, i.e., underground/above ground storage tanks, or underground/above ground fuel lines.

ENVIRONMENTAL IMPACT ASSESSMENT: A documentary evaluation of the impact upon the environment of any human activity.

ENVIRONMENTAL IMPACT STATEMENT: A documentary presentation justifying an adverse environmental impact.

ENVIRONMENTAL PROTECTION PLAN: A written document required by the Agency prior to the start of construction in which the developer/contractor describes the methods/equipment selected for use in the development, the environmental problems expected during and after development and the methods or equipment chosen to avoid, mitigate or control adverse effect on the environment.

ESTUARY: A region of interaction between near-shore waters and rivers within which tidal action and river flow bring about mixing of fresh and salt water.

FECAL COLIFORM: See "Coliform".

FWPCAA: Federal Water Pollution Control Act Amendments of 1972, as amended through 1987 (Clean Water Act).

HABITAT: The environment occupied by individuals of a particular species, population or community.

HIGHER DEGREE OF TREATMENT: Any physical, biological and/or chemical method directed at removing a specified portion of the remaining pollutants after secondary treatment.

HYDROLOGIC CYCLE: That natural system dealing with the properties, distribution, and circulation of water on the surface of the land, in the soil and underlying rocks, and in the atmosphere.

INDUSTRIAL WASTE: Any discharge containing gaseous, dissolved or suspended material resulting from any process of industry, manufacturing, trade or business or from the processing of any natural resource, together with such sewage as may be present, which may pollute the waters of the territory.

LAND TREATMENT: Any treatment of wastewater which involves the use of plants, soil surface and the soil matrix for wastewater treatment, including irrigation systems, infiltration systems, overland flow systems and other systems of wastewater treatment via land application.

LETHAL CONCENTRATION - 50 PERCENT (LC50): That concentration of a toxic substance in water which for a given time period causes 50 percent of the exposed individuals of an aquatic test organism to die.

LIMITED BODY CONTACT: Any recreational or other use in which contact with the water is either incidental or accidental and in which the probability of ingesting appreciable quantities of water is minimal.

LINE OF MEAN HIGH WATER: The shoreline as indicated on the 1:24,000 Series (Topographic) Maps of the Island of Guam prepared by the U.S. Geological Survey.

MARINE SANITATION DEVICE: Equipment or process for installation on vessel or water craft which is designed to receive, retain, treat, or discharge sewage or other pollutants or any process to treat such sewage, or other pollutants which has received U.S. Coast Guard approval.

MIXING ZONE: The area or volume of a water body within which effluent(s) shall become physically mixed with the receiving waters through initial dilution. Initial dilution is the process through which the wastewater immediately mixes with the receiving water due to the momentum of the waste discharge and the difference in density between the discharge and the receiving water. The total area or volume of water designated as a mixing zone shall be limited to that area or volume which will not interfere with biological communities or populations of important species to a degree which is damaging to the ecosystem and which will not cause substantial damage to or impairment of designated water uses within the mixing zone or in surrounding waters. A mixing zone shall be considered designated only when approved by the Guam Environmental Agency and when concurrence of the U.S. EPA has been received.

MUNICIPAL WASTES: Water carrying human and animal wastes from homes, buildings, industrial establishments and other places either alone or in combination with industrial wastes.

NATURAL CONDITIONS: The resulting water quality in the absence of any measurable pollution effect due to human activities.

NEAR-SHORE WATERS: All coastal waters lying within a defined reef area; all coastal waters of a depth of less than ten fathoms (60 feet, 18.3 m.); and all coastal waters greater than 10 fathoms up to 1,000 feet (305 m.) off-shore where there is no defined reef area.

NEW SOURCE: Any wastewater sources, the construction of which is commenced on or after the 1968 effective date of these standards.

NPDES PERMIT: National Pollution Discharge Elimination System (permit). A federal permit used as the principal regulatory tool for reducing the quantity of pollutant discharges to the waters of the territory and for obtaining data on point source discharges.

OFF-SHORE WATERS: All coastal waters beyond the limits defined for "near-shore waters" to the Territorial Limit as recognized by International Law.

OUTFALL: The conduit from its connection to a wastewater treatment facility to its outlet through diffusers into off shore waters.

OIL SPILL PREVENTION DEVICES: Shall mean any U.S. Coast Guard approved device, such as an oil/water separator, a sludge tank (for oily deposits), a standard discharge connection or other equipment or apparatus required by the MAROL Convention of 1973/1978 for the prevention of oil pollution of vessels.

OTHER WASTE: Garbage, municipal refuse, sand, offal, oil, tar, chemicals and all other substances which may pollute the waters of the territory.

PARABASAL GROUNDWATER: Fresh groundwater hydraulically connected with basal water but lying directly on impermeable basement rock.

PASSAGEWAY: A continuous stretch where water characteristics are affected only by the environment in such a manner that the free flow or continuous drifting of biota is always possible.

PERMIT: A permit issued pursuant to Section 47106 of the Guam Water Pollution Control Act.

PERSON(S): Means any individual, firm, partnership, association or corporation, both public and private, including the agencies of the Government of Guam and of the United States of America.

POINT SOURCE: Any discernible, confined and discrete conveyance including, but not limited to, any pipe, ditch, channel, tunnel, conduit, well discrete fissure, container, rolling stock, concentrated animal feeding operation, or vessel or other floating craft from which pollutants are or may be discharged. This term does not include flows from irrigated agriculture.

POLLUTANT: Any substance, refuse or waste, dredged spoils, solid waste, incinerator residue, sewage, garbage, sewage sludge, munitions, chemical wastes, biological materials, radioactive materials, heat, wrecked or discarded equipment, rock, sand, cellar dirt and industrial, municipal and agricultural waste discharge into the water and capable of polluting the waters. See Pollution.

POLLUTION: Alteration of the physical, chemical or biological and radiological properties of any waters of the Territory which adversely and unreasonably impairs the water quality of the territory or which renders said waters hazardous to human health or harmful or detrimental to the aquatic and wildlife in or about the waters or to the most beneficial uses of the waters.

POTABLE WATER RESOURCES: Waters of the Territory actually used or intended to be used for drinking water or general domestic use.

PRIMARY TREATMENT: Removal of floating or settleable solids through screening and sedimentation processes.

RESTORATION: An activity returning a wetland from a disturbed or altered condition with lesser acreage or functions to a previous condition with greater wetland acreage or functions. For example, restoration might involve the plugging of a drainage ditch to restore the hydrology to an area that was a wetland before the installation of the drainage ditch.

RECEIVING WATER(S): Water(s) of the Territory into which wastes or wastewaters are, or may be discharged.

SECONDARY TREATMENT: The following degree of pollution removal:

1. Biochemical oxygen demand (five-day)

   a) The arithmetical mean of the values for effluent samples collected in a period 30 consecutive days shall not exceed 30 mg/l.

   b) The arithmetic mean of the values for effluent samples collected in a period of seven consecutive days shall not exceed 45 mg/l.

   c) The arithmetic mean of the values for effluent samples collected in a period of 30 consecutive days shall not exceed 15 percent of the arithmetic mean of the values for influent samples collected at approximately the same times during the same period (85 percent removal).

2. Suspended solids

   a) The arithmetic mean of the values for effluent samples collected in a period of 30 consecutive days shall not exceed 30 mg/l.

   b) The arithmetic mean of the values for effluent samples collected in a period of seven consecutive days shall not exceed 45 mg/l.

   c) The arithmetic mean of the values for effluent samples collected in a period of 30

consecutive days shall not exceed 15 percent of the arithmetic mean of the values for influent samples collected approximately the same times during the same period (85 percent removal).

3. Fecal coliform bacteria

   a) The arithmetic mean of the value for effluent samples collected in a period of 30 consecutive days shall not exceed 200 per 100 ml.

   b) The arithmetic mean of the values for effluent samples collected in a period of seven consecutive days shall not exceed 400 per 100 ml.

4. pH

   a) The effluent values for pH shall remain within the limits of 6.0 to 9.0.

SCHEDULE OF COMPLIANCE: A schedule of corrective measures and times including an enforceable sequence of actions or operations leading to compliance with any control regulation or effluent limitation in a specified time period.

SEWAGE: The water-carried waste products from the residences, public buildings, institutions or other buildings, including the excrementitious or other discharge from the bodies of human beings or animals, together with such ground water infiltration and surface water as may be present.

SPECIAL AQUATIC SITES: Sites possessing special ecological characteristics and values including wetlands, wildlife sanctuaries and refuges, mud flats, vegetated shallows, coral reefs, riffle and pool complexes.

SURFACE WATERS: Any natural or artificial water source including all streams, sinkholes, lakes, ponds, wetlands, impounding reservoirs, inland watercourses and waterways, springs, irrigation systems and all other inland water bodies or accumulated waters. For

the purpose of this regulation, the term does not include coastal waters or those subject to the ebb and flow of tides.

THERMAL DISCHARGE: Discharge of water into the environment which has temperature component either above or below the temperature of the receiving body of water.

TOXIC: Lethal, teratogenic or mutagenic, or otherwise damaging to man or other living organisms.

TRANSITION ZONE: In basal water the interface between the bottom of the freshwater lens and the underlying saltwater. Salinity is low at the top of the transition zone and increases to that of seawater at the bottom of the zone.

UPLAND: Any area that does not qualify as wetland because the associated hydrologic regime is not sufficiently wet to elicit development of vegetation, soils and/or hydrologic characteristics associated with wetlands, or is defined as open waters.

WASTEWATER: Sewage, industrial waste, or other waste, excluding thermal discharge, or any combination of these, whether treated or untreated, plus any admixed land runoff.

WATER QUALITY STANDARDS: The designated water body uses or classifications and the criteria including anti-degradation provisions and provisions for implementation to protect those uses and classifications.

WATERS OF THE TERRITORY: All waters within three miles from the high waterline surrounding Guam, streams (including intermittent streams), lakes, wells, springs, wetlands, irrigation systems, marshes, watercourses, waterways, sink holes, drainage systems and other bodies of water, surface and underground, natural or artificial, publicly or privately owned.

WETLANDS: Means areas of land where the water table is at, near or above the land surface long enough each year to result in the formation of characteristically wet (hydric) soil types, and support the growth of water dependent (hydrophytic) vegetation. Wetlands include, but are not limited to, marshes, swamps, mangroves,

natural ponds, surface springs, estuaries, bogs, and other such low-lying or similar areas. Inland wetlands will include all wetlands meeting the following conditions.

1) Wetlands greater than one hectare in size with less than 0.5% (ocean derived) salinity; and

2) Palustrine, Riverine and Lacustrine wetlands with greater than 30% wetland vegetation cover.

Wetlands must meet applicable water quality standards requirements based on where it is situated in accordance with Category Classification of the Water Quality Standards.

WETLAND FUNCTIONS: The beneficial uses of wetlands which are protected by these Water Quality Standards including but not limited to groundwater recharge/discharge, floodwater retention, sediment stabilization, nutrient removal/transformation, wildlife diversity/ abundance, aquatic diversity/abundance, and recreation.

WHOLE BODY CONTACT: Any recreation or other use in which there is whole body contact with the water involving a risk sufficient to pose a significant health hazard either by contact with or ingestion of the water.

ZONE OF PASSAGE: Shall mean a continuous water route which joins segments of river, stream, reservoir, estuary, or channel above, below, or around a mixing zone without going through the mixing zone. As a minimum, no less than one-third of the cross-section of the water body shall be retained in compliance with the water quality criteria in Section II.

APPENDIX A

LIST OF THE 126* PRIORITY TOXIC POLLUTANT DESIGNATED UNDER SECTION 307(A) (1) OF THE CLEAN WATER ACT.

Acenaphthene
Acenapthylene (PAH)
Acrolein
Acrylonitrile
Aldrin
Antimony
Anthracene
Arsenic
Asbestos

1,2-Benzanthracene (PAH)
Benzene
Benzidine
Benzo (a) Pyrene (3,4-Benzo-pyrene) (PAH)
3,4-Benzofluoranthene (PAH)
Benzo (A) Fluoranthene (PAH)
1,12-Benzoperylene (PAH)
Beryllium
Bromoform (Tribromomethane)
Bromomethane (Methyl Bromide)
4-Bromophenyl Phenyl Ether
Cadmium
Carbon Tetrachloride (Tetrachloromethane)
Chlordane
Chlorobenzene (Monochloro-Benzene)
Chlorodibromomethane (Halomethane)
Chloroethane (Monochloroethane)
Chloroethyl Ether (Bis-2)
1 Chloroethoxy Methane (Bis-2)
2 ChloroethylVinyl Ether
4-Chloro-3-Methylphenol
Chloromethane (Methyl Chloride)
Chloroform (Trichloromethane)
2-Chlorophenol
Chloroisopropyl Ether (Bis-2)
2-Chloronaphthalene
4-Chlorophenylphenyl Ether
Chromium (HEX)

1,2 Dichlorobenzene
1,3 Dichlorobenzene
1,4 Dichlorobenzene
3,3 Dichlorobenzidine
Dichloroethane 1,1
Dichloroethane 1,2
1,1 Dichloroethylene
1,2-Trans-Dichloroethylene
Dichlorobromomethane (Halomethanes)
Dichloromethane (Halomethanes)
2,4-Dichlorophenol
Dichloropropane 1,2

Dichloropropene 1,3
Dieldrin
Dimethylphenol 2,4
Diethyl phthalate
Dimethyl phthalate
Dinitrotoluene 2,4
Dinitrotoluene 2,6
2,4-Dinitrophenol
Dioxin (2,3,7,8-TCDD)
Diphenylhydrazine 1,2
Alpha Endosulfan
Beta Endosulfan
Endosulfan Sulfate
Endrin
Endrin Aldehyde
Ethylbenzene
Fluorene (PAH)
Fluoranthene
Heptachlor
Heptachlor Epoxide
Hexachloroethane
Hexachlorobenzene
Hexachlorobutadiene
Hexachlorocyclohexane (lindane)
Hexachlorocyclohexane (Alpha)
Hexachlorocyclohexane (Beta)
Hexachlorocyclohexane (Delta)
Hexachlorocyclopentadiene

Chromium (TRI)
Chrysene (PAH)
Copper
Cyanide
4,4,-DDT
4,4,-DDE
4,4,-DDD
Dibenzo (a,h) Anthracene (PAH)
2-Nitrophenol
4-Nitrophenol
4,6-Dinitro-2-Methylphenol
Nitrosodimethylamine N
Nitrosodiphenylamine-N
Nitrosodi-n-Propylamine-N
PCB 1242
PCB 1254
PCB 1221
PCB 1232
PCB 1248
PCB 1260
PCB 1016
Phenol
Pentachlorophenol
Phenanthrene (PAH**)
Bis (2-Ethyl Hexyl) Phthalate
Butyl Benzyl Phthalate
Ideno (1,2,3-cd) Pyrene (PAH)
Isophorone
Lead
Mercury
Naphthalene
Nickel
Nitrobenzene
Di-n-Butyl Phthalate
Di-n-Octyl-Phthalate
Pyrene (PAH)
Selenium
Silver
Tetrachloroethane 1,1,2,2
Tetrachloroethylene
Thallium
Toluene
Toxaphene
1,2,4 Trichlorobenzene
Trichloroethane 1,1,1
Trichloroethane 1,1,2
Trichloroethylene
Trichlorophenol 2,4,6
Vinyl Chloride (Chloroethylene)
Zinc

Note: * Three volatile chemicals were removed from the original of 129 (44 CFR 44502, July 30,1979, as amended at 46 FR 2266, January 8, 1981, 46 FR 10724, February 4, 1981)

** (PAH) means Poly Aeromatic Hydrocarbon

APPENDIX B

WETLAND

The National Wetlands Inventory (NWI) map published by the United States Fish & Wildlife Service (FWS), is the official, interim wetland map adopted for Guam pursuant to Executive Order 90-13, entitled "Protection of Wetlands", dated June 12, 1990. See Appendix D.

The Classification of Wetlands and Deepwater Habitats was developed by Cowardin et al in 1979 for the United States Fish & Wildlife Service. The interim map is used by the Territory of Guam for classification, inventory, and mapping wetlands.

1. The hierarchy of the Wetland Classification is shown in Figures I & IA.

2. The following are definitions of wetland classifications.

   a). Lacustrine wetlands include wetlands and deepwater habitats with all of the following characteristics:

      (1) situated in a topographic depression or dammed river channel;

      (2) lacking persistent emergents, trees, or shrubs with greater than 30% areal coverage; and

      (3) total area exceeding 8 hectares (20 acres).

      Lacustrine System if an active wave formed or bedrock shoreline feature makes up all or part of the boundary, or if the water depth in the deepest part of the basin exceeds two meters (6.6) at low water.

   b) Palustrine Wetlands include all nontidal fresh and saline wetlands dominated by trees, shrubs, emergents, shallows (aquatic beds, mudflats, and open water areas), and all such wetlands that occur in tidal areas where salinity due to ocean derived salts are < 0.5%.

(1) Basin Wetlands are associated with geomorphic depressions and drainage areas that are not associated with streams or lakes. They experience vertical water level fluctuations which may result from seasonal rains. They typically lack permanent, surface water outlets.

(2) Riparian Wetlands are located in zones that are at least periodically influenced by flooding and are adjacent to a flowing body of water that, wetlands of the riparian zone are unique because they are generally hydrologically open to seasonal or periodic flooding. (Mitsch and Gosselink 1986). The water flow is often parallel to the forest and the main hydrologic forcing functions are floods or seasonal rains. (Lugo et al. 1988)

c) Riverine Wetlands include all non-persistent emergent wetlands on the river floodplains and shallows contained within a channel (aquatic beds and mudflats). The riverine system is bounded on the landward side by Palustrine or upland systems and on the channel side by deepwater environment (>6.6 feet in depth). The riverine system terminates with exceedence of ocean derived downstream salts of >0.5% or where the channel enters a lake or palustrine wetland.

(1) Shallows are areas of shallow open water (to 6.6 feet deep) dominated by submerged or floating leaved aquatic beds and/or the zone between low and high water that includes both sand flats and other mudflats. According to the Cowardin classification system, this includes that aquatic beds and unconsolidated shore, as well as open water areas that are not part of the lacustrine system (Frayer et al. 1983).

(1a) Aquatic beds are wetlands and deepwater habitats dominated by macrophytic plants that grow principally on or below the surface of the water for most of the growing season in most years.

(1b) Mudflats are unconsolidated shores including all wetland habitats with (1) unconsolidated substrates (predominantly silt, sand, and clay with less than 75% areal cover of stones, boulders, or bedrock; (2) less than 30% areal cover of vegetation other than pioneering plants; and (3) any of the following water regimess: irregularly exposed, regularly flooded, irregularly flooded, seasonally flooded, temporarily flooded, intermittently flooded, saturated, or artificially flooded.

(1c) Other Open Water Areas include small (0-30 acres, shallow (0-6.6 feet) saline or fresh natural surface depressions that act as precipitation catchment basins, but are often ephermal, because of high evapotranspiration rates. These areas are not densely vegetated (have less than 30% vegetation) and include the colloquial classes of prairie potholes, plays lakes, and ponds that are open water with little vegetation.

(2) Non-persistent emergent wetlands are dominated by plants that fall to the surface of the substrate or below the surface of the water at the end of the growing season so that, at certain seasons of the year, there is no obvious sign of emergent vegetation.

(3) Emergent wetlands are characterized by erect, vascular, rooted, herbaceous hydrophytes. The primary emergent sub-classes could either be saturated and flooded or broadleaved and narrowleaved.

(3a) Saturated - includes the erect, vascular, rooted herbaceous hydrophytes growing in saturated soil conditions as defined by Cowardin et al. 1979.

(3b) Flooded - includes the erect, vascular, rooted, herbaceous hydrophytes growing temporarily, seasonally, semi-permanently,

and permanently flooded soil conditions as defined by Cowardin et al. 1979.

(3c) Broadleaved - dominated by emergent herbaceous plant species which occur in wetter wetlands with more organic soils.

(3d) Narrowleaved - dominated by grassy vegetation (e.g., Carex, Scirpus) on wet soils and is usually distinguished from broadleaved emergents by having less saturation and shorter herbage.

(4) SS/ZX is a mixed community of primarily deciduous shrubs and emergents. The first community in the mixed order denotes the higher life form.

(5) Scrub/shrub wetlands are dominated by woody vegetation less than 6 meters (20 feet) tall. Species include true shrubs, young trees, and trees and shrubs with stunted growth because of environmental conditions.

(5a) Evergreen - A shrub community where evergreen shrubs represent more than 50% of total areal coverage of the shrub, tree, or herb vegetation.

(5b) Deciduous - A shrub community where deciduous shrubs represent more than 50% of total areal coverage of the shrub, tree, or herb vegetation.

(6) Forested wetlands are characterized by woody vegetation 6 m. tall or taller. The primary forest divisions of interest include evergreen and deciduous communities.

(6a) Evergreen - A forest community where evergreen trees represent more than 50% of total areal coverage of the shrub, tree, or herb vegetation.

(6b) Deciduous - A forest community where deciduous trees represent more than 50% of the total areal coverage of the shrub, tree, or herb vegetation.

3. Criteria for Wetland Identification:

The latest version of the Federal Manual for Identificating and Delineating Jurisdictional Wetlands, adopted by the United States Fish & Wildlife Service, the United State Environmental Protection Agency, and the U.S.D.A. Soils Conservation Services is adopted by reference by these standards. This manual describes technical criteria, field indicators and other sources of information, and methods for identification and delineation of jurisdictional wetlands. This manual shall serve as the technical basis for identifying and delineating jurisdictional wetlands in Guam.

4. Anti-degradation Policy

1) Existing instream water uses shall be maintained and protected. No further water quality degradation which would interfered with or become injurious to existing designated uses is allowable.

2) Waters in which existing water quality is better than the criteria prescribed in these rules and exceeds those levels necessary to support propagation of fish, shellfish and wildlife and recreation in and on the water shall be maintained and protected. However, the Administrator of Guam Environmental Protection Agency may approve to lower the water quality in wetlands, after compliance with public notice and participation, and intergovernmental coordination requirements listed at 40 CFR Part 25 and Part 29, and after due consideration of such technical, economic, social and other criteria as provided by Sections 301, and 302 of the Act. Degradation of water quality shall not interfered with or become injurious to existing or planned uses, and the Administrator shall require that the most stringent statutory and regulatory controls for waste treatment be employed by all new and existing point sources, and that feasible management or regulatory program pursuant to Section 208 and 30 of the Act, 33 U.S.C. Section 1298 and 1313, be applied to non-point sources.

3) Guam Resource waters are surface waters of the Territory lying within the territorial park system, wetlands, and wildlife refuges, areas, and preserves, and also include wild, scenic and recreational

rivers, publicly owned lakes and reservoirs and waters of exceptional recreational or ecological significance (e.g., waters which provide a habitat for identified threatened or endangered species) as determined by the Administrator of GEPA. All other discharge constituents shall be limited to the criteria associated with each designated water use. Areas that do not meet general water quality standards in these water use classification shall not be further degraded.

4) Wetland Evaluation

Wetland evaluations should include a plant and wildlife inventory and an evaluation of the wetland functions. High quality wetlands include, but are not limited to, those which provide habitat for threatened or endangered species and/or wetlands which are locally or regionally scarce or threatened.

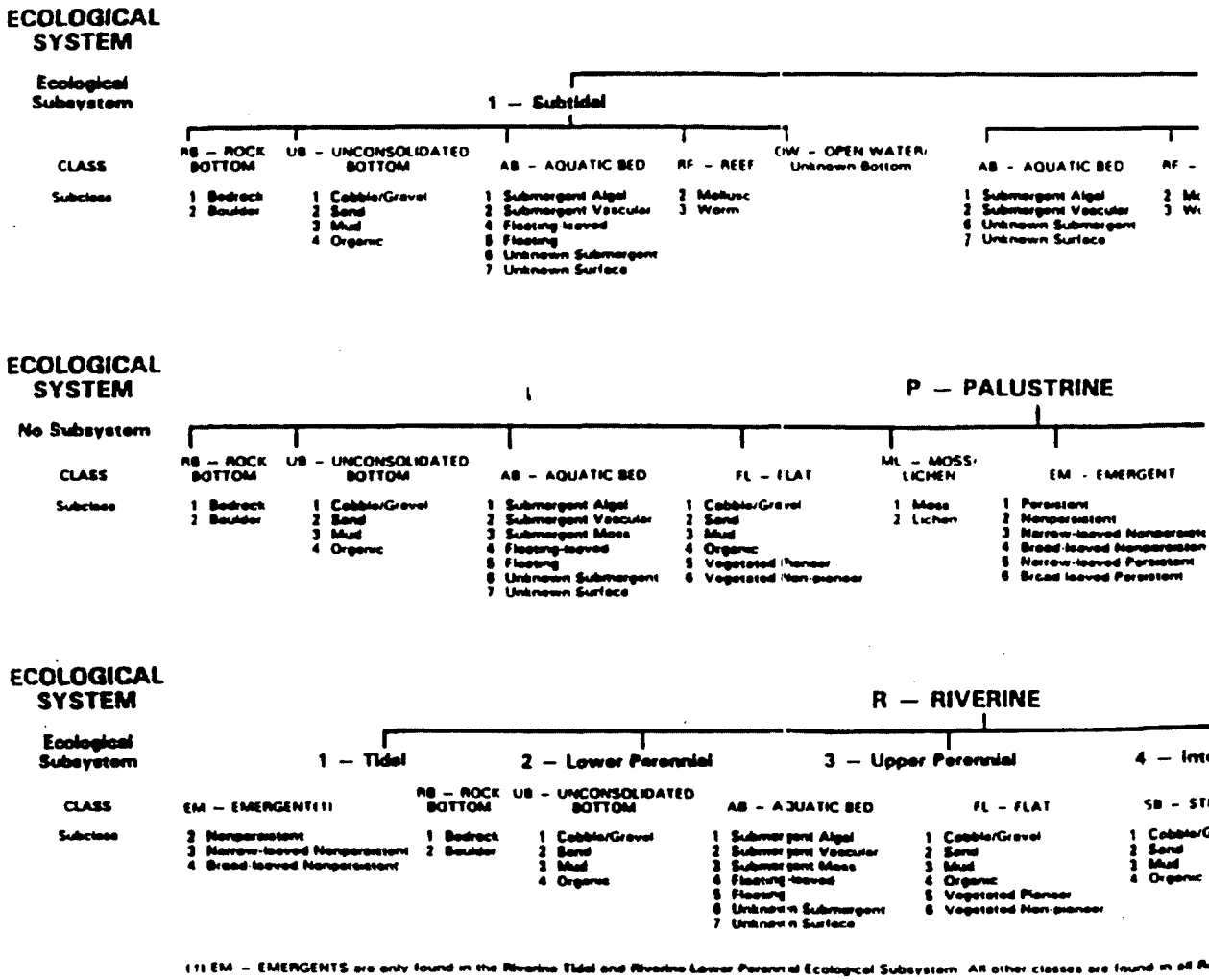
5) Mitigation

All wetlands in Guam are classified as Guam Resource Waters under this regulation and are protected from degradation. However, in certain instances, limited degradation may be permitted provided the applicants have worked to avoid impacts due to hydromodification (including reducing the scale of a proposed project), minimize the impacts and agreed to mitigate for the destruction of wetland habitat.

Acceptable mitigation include construction of a wetland designed to replace the wetland functions destroyed, and restoration or enhancement of an existing degraded wetland. Protection of an existing functional wetland is not acceptable mitigation for destruction of a wetland, however, as part of a mitigation plan, certification conditions may require protection of on-site wetlands through establishment of deed restrictions or easements.

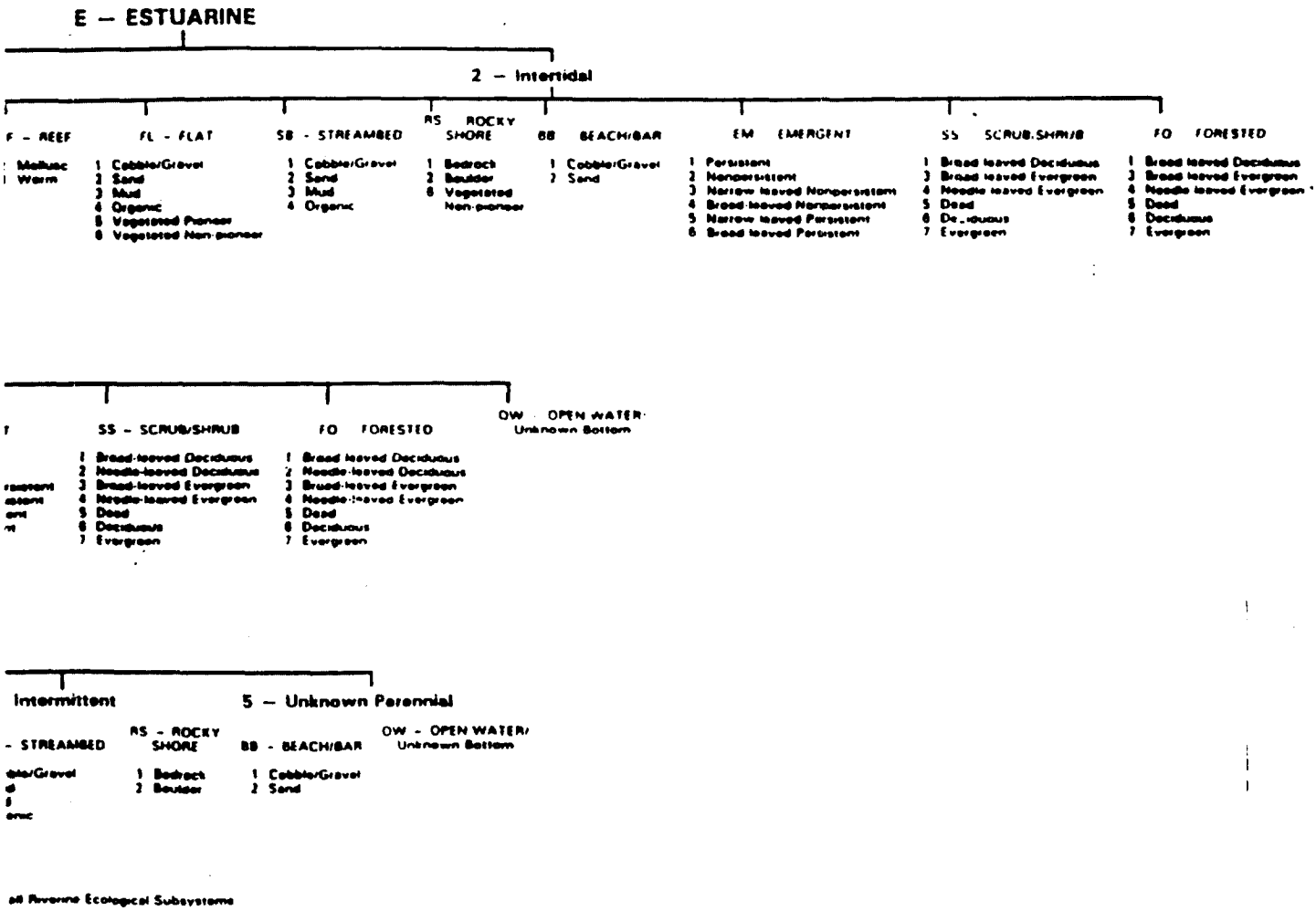
FIGURE I - WETLANDS AND DEEPWATER HABITATS

FICURE I - WETLANDS



(1) EM — EMERGENTS are only found in the Riverine Tidal and Riverine Lower Perennial Ecological Subsystem. All other classes are found in all R

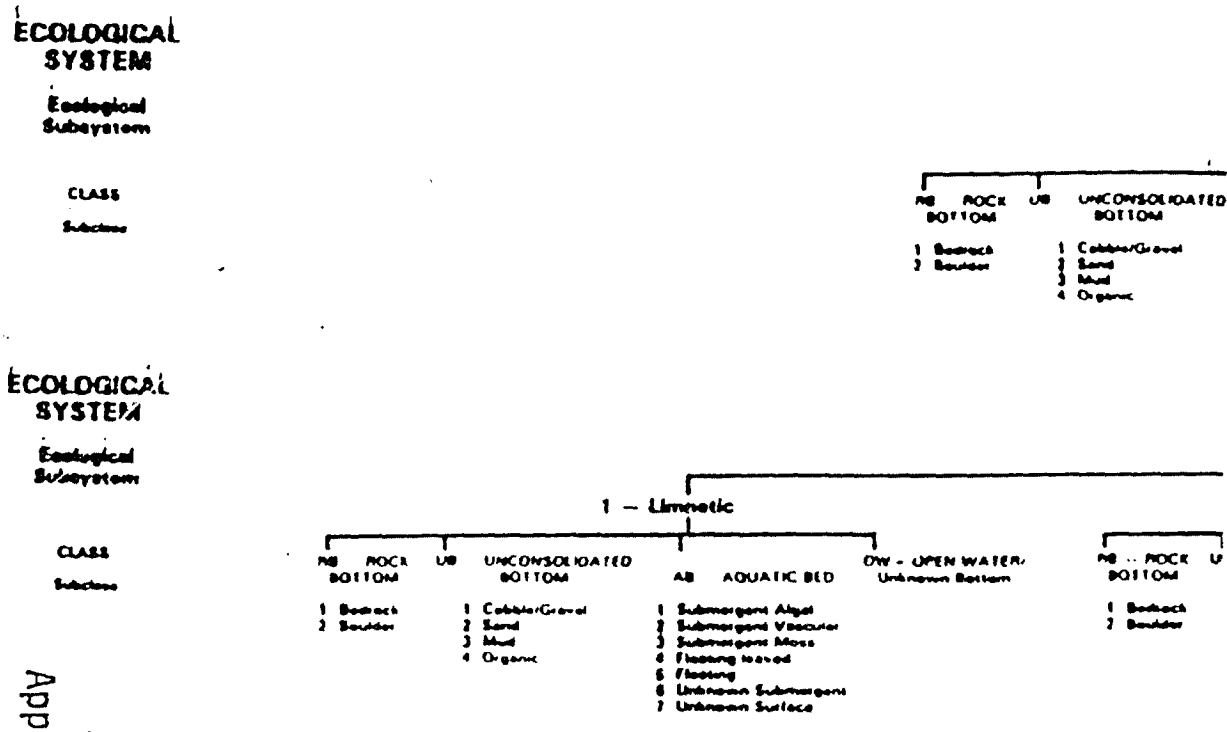
)S AND DEEPWATER HABITATS



all Riverine Ecological Subsystems

FIGURE IA - WETLANDS AND DEEPWATER HABITATS

FIGURE IA - WETLANDS



Appendix B - 5

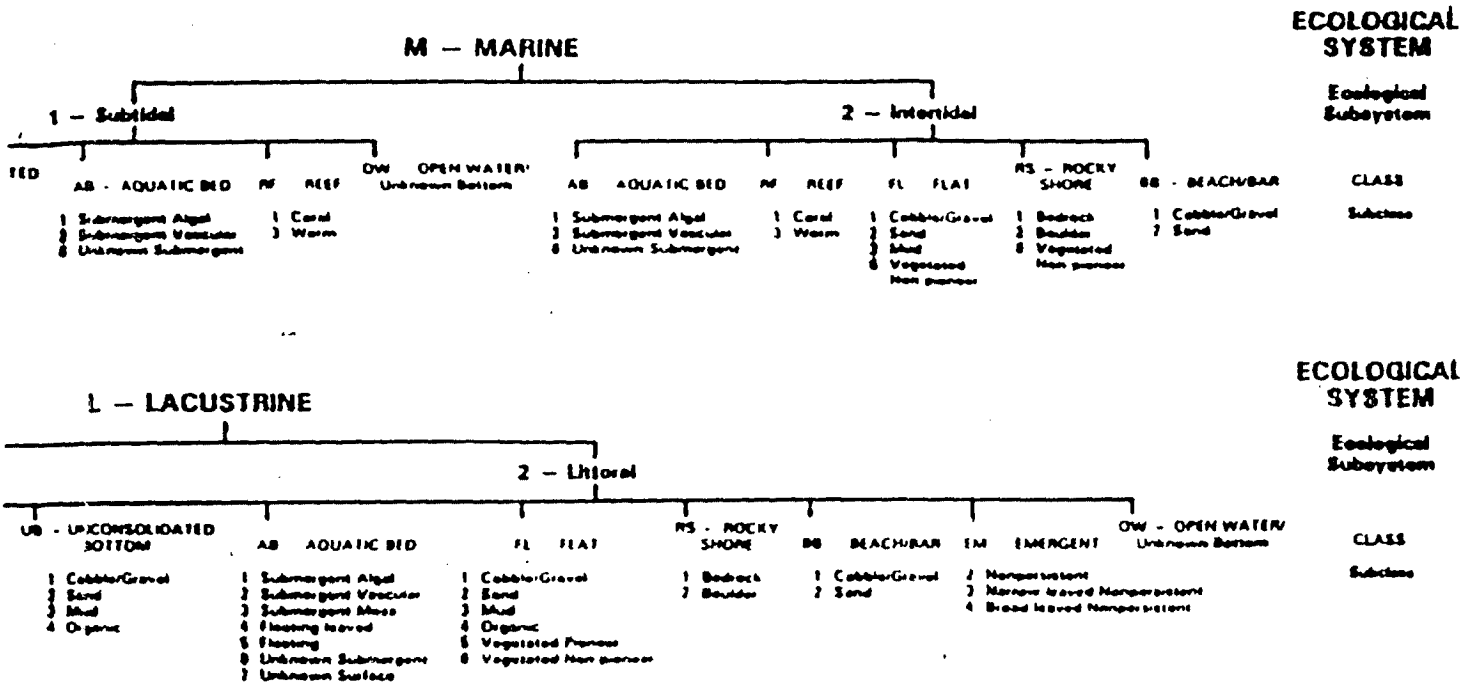
MOD

In order to more adequately describe wetland and aquatic habit
may be applied at the class or lower level in the hierarc

WATER REGIME(1)												Co
Non-Tidal						Tidal						
A	Temporary	H	Permanent	K	Artificial	R	Seasonal Tidal	1	H
B	Saturated	J	Intermittently Flooded	L	Subtidal	S	Temporary Tidal	2	H
C	Seasonal	K	Artificial	M	Irregularly Exposed	T	Semipermanent Tidal	3	M
D	Seasonal Well-drained	Z	Intermittently Exposed/Permanent	N	Regular	V	Permanent Tidal	4	M
E	Seasonal Saturated	W	Intermittently Flooded-Temporary	P	Irregular	U	Unknown	5	M
F	Semipermanent	Y	Saturated/Semipermanent/Seasonal					6	D
G	Intermittently Exposed	U	Unknown					9	U

(1) Information on the water regime modifiers found on this legend, but not found in the classification system, may

DS AND DEEPWATER HABITATS



)DIFYING TERMS

bitats one or more of the water regime, water chemistry, soil, or special modifiers
archy. The farmed modifier may also be applied to the ecological system.

WATER CHEMISTRY			SOIL	SPECIAL MODIFIERS	
Coastal Salinity	Inland Salinity	pH Modifiers for all Fresh Water			
) Hypersaline 1 Eusaline) Mixosaline (Brackish) 1 Polysaline 1 Mixosaline 1 Oligosaline) Fresh	) Hypersaline 8 Eusaline 8 Mixosaline 0 Fresh	a Acid i Circumneutral i Alkaline	g Organic n Mineral	b Beaver d Partially Drained/Ditched f Farmed	h Diked/Impounded r Artificial s Spoil x Excavated

may be obtained from the above listed source

APPENDIX C

CREATED WETLAND GUIDELINES

This guidance encourages the expansion of the Territory's Wetland Resource through the creation and restoration of wetlands using municipal wastewater, while also allowing the use of natural wetlands for treatment if specific requirements are met.

If the wetland is created as part of the treatment process, the minimum requirements on the degree of pretreatment shall include secondary treatment, and applicable water quality standards must be met for water bodies that receive the effluent from the wetland treatment system. If the wetland currently exist, the following requirement apply:

1. Minimum of secondary treatment prior to discharge to the wetland.

2. Advanced treatment prior to discharge to the wetland if necessary to meet Guam Water Quality Standards applicable to the wetland.

3. Discharge to the wetland free of toxic contaminants at levels that would impair beneficial uses; e.g., chlorine.

4. Monitoring in the wetland to detect accumulation of toxic contaminants and changes to the plant/animal communities.

5. Section 402 NPDES permit.

6. Section 404 permit if alterations of the wetland are required at part of construction.

7. Review on a case-by-case basis.

Reference: Appendix D of document entitled "Report on the Use of Wetlands for Municipal Wastewater Treatment and Disposal, dated October 1987, EPA 430/09-88-005, prepared by U.S.E.P.A., Office of Water, Office of Municipal Pollution Control (WH-546) with September 1988 Guidance to supplement the October 1987 Burdick Report.

APPENDIX D

EXECUTIVE ORDER NO. 90-13

PROTECTION OF WETLANDS

APPENDIX "D"

TERRITORY OF GUAM
OFFICE OF THE GOVERNOR
AGAÑA, GUAM 96910
U.S.A.

EXECUTIVE ORDER NO. 90-13

PROTECTION OF WETLANDS.

WHEREAS, Executive Order 78-21 directed the Territorial Land Use Commission to officially designate wetland areas on Guam; and

WHEREAS, Government agencies have been utilizing three separate maps to identify wetland areas due to the lack of an officially adopted map; and

WHEREAS, wetlands are areas of particular concern that provide an essential habitat for maintenance of native plant and animal life, prevent soil erosion and stormwave damage, and valuable locations for scientific and educational investigations, and act as floodplains during periods of excessive water flow and a source of fresh water for domestic and agricultural purposes; and

WHEREAS, the rapid pace of development currently experienced on Guam has placed greater pressure on this valuable resource; and

WHEREAS, the management of this resource cannot begin until landowners, developers and the Government of Guam utilize a consistent source of wetland information.

NOW, THEREFORE, I, JOSEPH F. ADA, Governor of the Territory of Guam, pursuant to the authority vested in me by the Organic Act of Guam, do hereby declare that:

1. The official, interim wetland map for Guam shall be the National Wetlands Inventory map published by the United States Fish and Wildlife Service.

2. All Government of Guam agencies shall utilize this map in the review of physical development projects.

3. The appropriate land use agencies including the Guam Environmental Protection Agency, the Department of Agriculture, and the Bureau of Planning shall complete a study of wetlands; prepare public information material; and draft all necessary legislation, rules and regulations, and/or executive orders for processing through the appropriate channels.

4. The Executive Order shall remain in effect until the results of such study recommended legal framework are approved as required by applicable law.

5. Executive Order 78-21 is repealed in its entirety.

SIGNED AND PROMULGATED this 12th day of JUNE, 1990.

Joseph F. Ada
JOSEPH F. ADA
Governor of Guam.

COUNTERSIGNED:

FRANK F. BLAS
Lieutenant Governor of Guam

APPENDIX E

EXECUTIVE ORDER NO. 90-09

ESTABLISHING THE DEVELOPMENT REVIEW COMMITTEE

TERRITORY OF GUAM
OFFICE OF THE GOVERNOR
AGAÑA, GUAM 96910
U.S.A.

EXECUTIVE ORDER NO. 90-09

ESTABLISHING THE DEVELOPMENT REVIEW COMMITTEE

WHEREAS, Guam's unprecedented economic and development activity provides the Territory of Guam with many opportunities of an extremely positive nature, but also poses significant risk to our environment, our culture, and the very quality of life that has made Guam such a wonderful place to live and visit; and

WHEREAS, it is increasingly vital that Territorial Land Use Commission/Territorial Seashore Protection Commission exercise care and caution in the conduct of its activities and that all the laws and regulations governing land and water use in this Territory are followed to the letter; and

WHEREAS, the concerns of other governmental bodies that are tasked with review of these projects must be taken into serious consideration by the Territorial Land Use Commission/Territorial Seashore Protection Commission when a decision is to be made with respect to the approval of projects; and

WHEREAS, there is a need for an effective intergovernmental mechanism for review and analysis of various development activities brought before the Territorial Land Use Commission/Territorial Seashore Protection Commission; and

WHEREAS, it is desireable that such review be coordinated through a committee composed of various representatives of government agencies involved in land and water use related activities.

NOW, THEREFORE, I, JOSEPH F. ADA, Governor of the Territory of Guam, by virtue of the authority vested in me by the Organic Act of Guam, as amended, do hereby order that:

1. The Development Review Committee is created with the following duties and responsibilities:

   A. Developing and providing official position statements by GovGuam agencies on applications submitted under the Zoning and Subdivison laws, the Territorial Seashore Protection Act and other such laws as may be enacted by the Legislature.

   B. Advising applicants of the procedures and requirements for submitting applications.

   C. Advising applicants on alternatives to ensure that proposed projects comply with applicable law.

   D. Promoting and assuring the compliance of development with all appropriate governmental policies and plans.

   E. To establish such rules and regulations as necessary to effectively carry out those duties and responsibilities as outlined above.

APPENDIX F

GUIDELINES FOR THE REVIEW AND ISSUANCE OF 401 WATER QUALITY CERTIFICATION PURSUANT TO SECTION 401 OF THE FEDERAL CLEAN WATER ACT TO ALL WATERS OF THE TERRITORY OF GUAM INCLUDING WETLANDS AND SPECIAL AQUATIC SITES.

I. Primary Goal of the Water Quality Certification:

a) to protect the Territory's waters and special aquatic wetlands from chemical, physical, and biological impacts and other types of alterations.

b) Guam 401 Certification covers any activity including, but not limited to the construction or operation of facilities which may result in any discharges.

II. 401 WATER QUALITY CERTIFICATION:

As a requirement of Section 401, Water Quality Certification (WQC) the Clean Water Act of 1977 (Public Law 95-217), "Any applicant for a Federal license or permit to conduct any activity including, but not limited to, the construction or operation of facilities, which may result in any discharge into the navigable water, shall provide the licensing or permitting agency a certification from the State or Territory, in which the discharge originates or will originate, or if appropriate, that any such discharge will comply with the applicable provisions of sections 301, 302, 303, 304, 306 307, 318 and 405, of this Act". Of concern here are the construction activities and as one of statements required in the certification is a statement that there is reasonable assurance that the activity will be conducted in a manner which will not violate applicable water quality standards (WQS).

A. The goals are to restore and maintain a biological integrity of the territory's waters and to eliminate all discharges of pollutants (including dredged and fill materials).

1. The following is required to accompany an application for 401 Water Quality Certification for the Agency to start the review process.

a) A historical overview and ecological evaluation of the site (including biota inventory and existing bioaccumulation studies);

A brief review of historical data from the area is necessary to properly evaluate a project. This review should address the following known or suspected pollutant sources and types of potential sediment contaminants, previous dredging activities, previous disposal methods and locations, quantity and quality of these materials and any benefits or problems associated with these activities.

An ecological evaluation should include a review of existing inventories describing the area biota to determine local populations and if endangered species are present. Conditions that support their well-being should be noted. The applicable beneficial use designation should be determined. (Waterbodies which are territorial resource waters are considered high quality). Review existing bioaccumulation studies to determine if any problems exist with the uptake of heavy metals or organics.

b) A sediment physical characterization (to predict contaminant levels); and

Characterization of the sediment particle size and composition is important in assessing potential contaminant levels. Sand and coarse-grained inorganic sediments (greater than 0.24 mm) rarely are contaminated. Conversely, fine organic sediments (less than 0.24 mm) generally retain the highest levels of contaminants. This information is helpful in determining the need for chemical analyses of the sediment. Generally, sediment-physical characterization is conducted when in-water disposal is proposed or contamination of sediment is suspected based on the results

of the Historical and Ecological Evaluation.

c) A sediment analysis.

i) Sediment Chemical Analyses

Chemical characterization of the sediment can be done in two ways. The bulk analyses determines the total levels of sediment parameters on a dry-weight basis. Suggested parameters and are listed below. In both cases, the parameter list should be modified as necessary to address site-specific concerns. If the historic overview indicates the potential presence of organics, then sediment samples must be analyzed for these compounds. A parameter list should be prepared on a site-specific basis, using the Guam EPA Priority Pollutants list and the Guam Water Quality Standards as guidance.

ii) Bulk Sediment Analysis

Parameters (dry weight)

Ammonia (NH3 -N)	Nickel (Nl)
Arsenic (As)	Oil & Grease
Cadmium (Cd)	Phosphorus (P, Total)
Chromium (Cr)	Total Kjeldahl Nitrogen
Chemical Oxygen Demand	
Copper (Cu)	Volatile Solids (%)
Iron (Fe)	Total organic carbon
Zine (Zn)	Cyanide, Total
Phenolics, Total	Mercury (Mg)

iii) Elutriate Analysis

Parameters

Ammonia (NH3-N)	Nickel (Nl)
Arsenic (As)	Oil and Grease
Cadmium (Cd)	Phosphorus (P, Total)
Chromium (Cr)	Iron (Fe)
Copper (Cu)	Mercury (Hg)
Zinc (Zn)	Phenolics, Total
Cyanide, Total	

iv) Sediment Bioassay

An important consideration in evaluating a dredging or disposal activity is the impact on the aquatic organisms. Two basic types of tests can be used to evaluate this impact: Algal bioassays, which measure acute or chronic effects. Methods and test organisms vary and it is recommended that the bioassays be coordinated with the U.S. EPA, Region IX, the local Department of Agriculture and the U.S. Fish & Wildlife Service.

If sediment contamination levels warrant, upland disposal projects, specify conditions to minimize the adverse impacts from upland site run-off and discharge of decant water.

2. No certification may be issued by the Agency unless the applicant has demonstration of that activities permitted by Section 404 of the Federal Clean Water Act of 1987 will not:

   a) prevent or interfere with the attainment or maintenance of applicable water quality standards;

   b) result in a violation of any applicable Guam Water Quality Standard; additionally, the Agency may deny a request notwithstanding the applicant's demonstration of the above if it concludes that the activity "will result in adverse long or short term impacts on water quality."

3. Restrictions on Discharges to Territory's Waters.

   a) The discharge of dredged or fill is prohibited (i.e. no permit will be issued)

if there is a less-damaging practicable alternative. This restriction is interpreted as: "avoiding fill in waters of the territory whenever possible, regardless of the availability of mitigation". Mitigation should not be used to justify unnecessary fills.

b) Furthermore, if a project is not water-dependent and the discharge associated with the project is proposed in "special aquatic site" (specifically: wetlands, mudflats, sanctuaries and refuges, vegetated shallows, coral reefs, or riffle and pool complexes), the project applicant must prove that there is no less-damaging practicable alternative available to achieve the overall project purposes irregardless of economic considerations.

The "water dependency test" should be interpreted as follows: The project's purpose is dependent upon fill in a special aquatic site (i.e. do restaurants, by definition, require fill in wetlands to be restaurants?)

c) Prohibit the discharge of dredged or fill material into waters of the Territory if it:

i) Causes or contributes to violations of any applicable Guam Water Quality Standard,

ii) Violates any applicable toxic effluent standard,

iii) Jeopardizes the continued existence of any federally-listed threatened or endangered species, or

iv) Violates any federal marine sanctuary requirement.

d) Prohibit the discharge of dredged or fill material into waters of the Territory if it:

i) Causes or contributes to significant degradation of the waters of the Territory including but not limited to:

(a) Municipal water supplies,
(b) Plankton,
(c) Fish.
(d) Shellfish,
(e) Wildlife,
(f) Special aquatic sites, or
(g) Recreation.

e) Prohibit the discharge of dredged or fill material into waters of the Territory unless appropriate and practicable steps have been taken which will minimize potential adverse impacts of the discharge on the aquatic ecosystem (i.e. mitigation requirements);

f) Require a finding of non-compliance for (and therefore prohibit) the discharge of dredged or fill material if there is insufficient information upon which to base a determination that the discharge will comply with the Guidelines.

g) If the project is not water dependent, the certification will be denied.

h) If the project is water dependent, the certification will be denied if there is a viable alternative (e.g., available upland nearby is viable alternative).

i) If no viable alternatives exist and impacts to wetland cannot be made acceptable through conditions on certification (e.g., fish movement criteria, creation of floodways to by-pass oxbows, flow through criteria), the certification will be denied.

j) If the project would interfere with existing uses and the project is not water dependent the certification will be denied.

4. Dam construction review for 401 Water Quality

Certification.

a) Applicant must provide investigations performed for wetlands lost as a result of the construction of the project. Mitigative creation of new wetlands should be located on newly created headwater areas.

b) Assure adequate filtration of run-off prior to its entry into the reservoir.

c) Replace the aquatic resource being lost on an acre for acre basis.

d) Applicant to provide a Watershed Management Plan to minimize pollution loadings into the reservoir. This plan must be approved by the Agency prior to operation of the new dam facility. Any pollutant loading certified during field surveys shall be eliminated or minimized to the extent possible given available technology.

5. Mitigation Policy Statements

A. GEPA will actively promote and support mitigation for all projects subject to Section 404 of the Clean Water Act in accordance with the 404(b)(1) Guidelines (40 CFR 230.10). Specifically,

1. GEPA will consider mitigation in the following sequence:

a. GEPA will actively promote project alternatives which avoid all adverse environmental impacts associated with the proposed action, consistent with 40 CFR 230.10(a). For proposed discharges of dredged or fill material for non-water dependent activities in special aquatic sites, the burden of proof shall be on the applicant to demonstrate that practicable, less environmentally damaging alternatives are not available irregardless of economic considerations. For all other proposed discharges, GEPA will require information demonstrating that the proposed action is the only available practicable alternative. In the absence of such demonstration, GEPA will deny approval or require modification of the 404 permit. In evaluating an analysis of practicable alternatives, proposed habit at compensation will not be considered in determining which of the alternatives examined is the least environmentally damaging.

b. GEPA will actively promote alternatives which reduce or minimize adverse environmental impacts. This will include

requirements to reduce the amount and extent of fill (or dredging), and to modify the timing of construction.

c. For projects which have been conclusively demonstrated to have no practicable alternative, EPA will consider compensation by in-kind aquatic habitat replacement in close proximity to the project site.

2. GEPA will promote and support pre-application conferences and field inspections to develop acceptable mitigation proposals, including the exploration of reasonable alternatives which avoid or minimize adverse environmental impacts on the aquatic ecosystem.

3. GEPA will coordinate mitigation activities with the U.S. Fish & Wildlife Service, the Corps of Engineers, the United States Environmental Protection Agency, and other appropriate federal and territorial agencies in order to maximize concerns and avoid duplication of effort.

4. GEPA will seek the inclusion of mitigation as an integral part of projects subject to Section 404 permit authority, and will deny approval for any project which does not include an acceptable mitigation plan. GEPA will deny approval of 404 permits unless it is clear that the permitting authority can revoke or suspend the permit for failure to implement the approved mitigation, and unless the permit conditions involving mitigation are enforceable by GEPA.

5. GEPA will require monitoring for all

mitigative actions involving habitat creation, enhancement or restoration. The period of monitoring will be determined on a case-by-case basis, in consultation with appropriate states and federal resource agencies, and will be of sufficient length to adequately assess project success.

6. GEPA will require pilot studies for any mitigative action which has not been scientifically demonstrated to be successful, or about which there is significant resource agency uncertainty. The pilot studies must be completed, before USEPA,Region IX will agree to the proposed discharge.

7. GEPA will consider mitigation banking only in those instances where such an approach will result in resource gains which are demonstrably superior to those expected using case-by-case mitigation.

8. Where feasible, GEPA will promote the fee title transfer of mitigation sites to the local resource agency with management responsibility for the created or preserved aquatic habitat.

9. Preservation of existing aquatic resources, in the absence of any enhancement of those resources, will not be considered mitigation, as such a policy would sanction an irretrievable net loss of aquatic resources.

B. APPLICABLE LAWS, STATUES AND REGULATIONS

1. Public Law 92-500, Federal Water Pollution Control Act (FWPCA) of 1972.

2. Public Law 95-217, Clean Water Act (CWA) of 1977 (Note: Some changes are amendments to the FWPCA and some are independent provisions.)

3. Title 10, Chapter 47, Guam Code annotated (GCA), Water Pollution Control Act, as amended by Public Law 17-87.

4. Guam Water Quality Standards.

5. Federal Nationwide 401 Permits are inapplicable in Guam.

C. 401 WATER QUALITY CERTIFICATION (WQC) AUTHORITY

The Administrator of the Guam Environmental Protection Agency as the designated issuing authority for 401 WQC.

D. APPLICABILITY

A Territorial Water Quality Certification pursuant to Section 401 of the Clean Water Act is required by any applicant for a Federal license or permit to conduct an activity in the territorial waters that would include, but not limited to, the construction and operation of facilities that may result in any discharge, as defined in Sections 502(6), 502(12), 502(16) of the Clean Water Act.

The following more common Federal permits require a 401 WQC prior to issuance: (it is recommended that the applicant check with the issuing and permit Federal agency).

1. Section 404 Permit of the Clean Water Act of 1977. Section 301 of this Act prohibits the discharge of dredged or fill material into waters of the United States without a permit from the U.S. Army Corps of Engineers (ACOE). Discharge refers to the fill (placement) construction activities. Dredging or fill material in this case are heterogeneous in nature. Issuing authority is the ACOE.

2. Section 402 Permit of the Clean Water Act of 1977. Also, prohibits the discharge of dredged or fill material without a permit from the U.S. Environmental Protections Agency (EPA). Dredge or fill material in this case are homogeneous in nature. Issuing

TABLE III

Limitations for Discharges to Categories G-2 and G-3

Groundwater Category	Fecal Coliform	COD (mg/l)	pH	Chlorides (mg/l)	Ortho-phosphate (PO_4-P) (mg/l)	Nitrate-Nitrogen (NO_3-N) (mg/l)	Oil and Grease (mg/l)
G-2a	20/100 m/l	20	6-10	250	10	5	0.005
G-2b	200/100 m/l	20	6-10	250	10	5	5
G-3a (<3,000 gpd)	-(2)	300	6-10	500(1)	25	30(3)	5
G-3b (>3,000 gpd)	400(4)/100 ml	50	6-10	500(1)	10	5(3)	5

(1)outside of the Groundwater Protection Zone this limit is increased to 2000 mg/l

(2)concentrations to be established on a case-by-case basis by the Agency

(3)for animal feedlot operations higher discharge limitations may be permitted on a case-by-case basis

(4)daily average is based on a minimum of 15 samples per month

authority in the authority is the U.S. EPA.

3. Section 9 Permit of the Rivers and Harbors Act of 1989. Section 9 prohibits the construction of bridges or dams across navigable waters of the United States without congressional consent and U.S. ACOE.

4. Section 102 Permit of the Marine Protection, Research and Sanctuaries Act (MPRSA) of 1972, as amended. MPRSA controls the ocean dumping of material. Section 102 permits apply to the transport and disposal of non-dredged material. Issuing authority is the U.S. EPA.

5. Section 103 Permit of the MPRSA of 1972, as amended. Section 103 permits apply to the transport and disposal of dredged material. Issuing authority is the U.S. ACOE.

6. Discretionary authority of the Administrator as to applicability to any Federal activity not conforming to Section 404(r) of the Clean Water Act of 1977, which applies to Federal exemption (e.g., Civil Works Project). Issuing authority none because Congress authorizes the Federal project and the responsible Federal agency would not issue a permit to itself.

E. APPLICATION REQUIREMENTS

Application should be filed at least 90 days prior to the needed date of the 401 WQC.

There is no filing fee for the 401 WQC.

An applicant for 401 WQC shall submit to the Administrator a complete description of the discharge involved in the activity for which certification is sought, with a request for certification signed by the applicant. Each application shall include the following:

1. A description of the facility or acclivity, and of any discharge into territory's waters which may result from the conduct of any activity including, but not limited to, the construction or operation of the facility, including the biological, chemical, thermal, and other characteristics of the discharge, and the location or locations at which such discharge may enter territory's waters.

2. A description of the function and operation of equipment or facilities to treat wastes or other effluents which may be discharged, including specification of the degree of treatment expected to be attained.

3. The date or dates on which the activity will begin and end, if known, and the date or dates on which the discharge will take place.

4. a description of the methods and means being used or proposed to monitor the water quality and characteristics of the discharge and the operation of equipment or facilities employed in the treatment or control of wastes or other effluents.

5. Describe the recreational uses of the territory water at the discharge and state whether the basic water quality criteria and the applicable Guam water quality standards will be met.

6. Submit plans, specifications and copies or citation of an Environmental Impact Assessment or Environmental Impact Statement as it may apply.

7. Submit historical overview and ecological evaluation of the site (including biota inventory and existing bioaccumulation studies).

8. Submit a sediment physical characterization (to predict contaminant levels), and

9. Submit sediment analysis.

F. CONTENT OF CERTIFICATION

As a matter of information, the following shall be contained in the 401 WQC statement:

1. The name and address of the applicant.

2. A statement that the Administrator has either (i) examined the application made by the applicant to the Administrator and based its certification upon an evaluation of the information contained in such application which is relevant to water quality considerations, or (ii) examined other information

furnished by the applicant sufficient to permit the Administrator to make the statement described in paragraph (3,) of this section.

3. A statement that there is a reasonable assurance that the activity will be conducted in a manner which will not violate applicable WQS.

4. A statement of any conditions which the Administrator deems necessary or desirable with respect to the discharge or the activity.

5. Any other conditions as the Administrator may determine to be appropriate.

Any conditions specified in the 401 WQC shall be requested to be included as part of the issued Federal license or permit conditions.

G. PROCEDURES

a) The procedures shall be similar to rule making procedure, except that the Applicant shall determine whether to go or not to go directly to public hearing as provided in these guidelines.

b) The applicant shall submit application data based on the requirements contained in this interim guideline according to the provided, "Application Format" guidelines together with a request (refer to Section K of Regulations for the signatory requirements) for a 401 WQC.) After reviewing the application for completeness, the Administrator shall review and assess the application and make an initial determination that the construction or activity will not meet the applicable Guam WQS. After the initial determination, the Administrator will prepare the public notice for publication in the newspaper(s) of general circulation the application for 401 WQS. In addition, the public notice shall be mailed to interested parties listed on the notification mailing list established by the Guam Environmental Protection Agency.

c) The Application Format (Appendix L) made part of these Water Quality Standards is subject to a periodic revision by the Administrator and it shall be the responsibility of the applicant to have the

latest copy of the application format.

d) In the event a request is made for a public hearing that is supported by justifiable evidence, the Administrator shall provide a public hearing, in accordance with the Guam Administrative Adjudication Act. Public hearings will be held on the village the project is located in the vicinity of the project.

e) After the public notice and/or public hearing as the case maybe, the Administrator shall consider all evidence and testimonies presented and make a final determination for the 401 WQC.

f) The Administrator may, on his own motion or the application of any person, modify, suspend or revoke the 401 WQC if, after a hearing the Administrator determines that:

1. There is a violation of any condition of the 401 WQC.

2. The 401 WQC was obtained by misrepresentation, or failure to disclose fully all relevant facts; or

3. There is an unreasonable change in the scope of the project and activity; or

4. Such is in the public interest.

g) The Administrator shall issue a 401 WQC for a term not to exceed five years.

h) Any order or decision of the Administrator pursuant to these regulations shall become final, unless a hearing is requested within 30 days after the notice of the final decision before the GEPA Board of Directors.

The GEPA Board of Directors shall have the power to review and to affirm, modify or reverse any order or decision of the Administrator. Such appeal shall be made pursuant to the provisions of the Administrative Adjudication Law, Chapter II, Title XXV, of the Government Code of Guam.

i) Any order or decision of the Board pursuant to these regulations shall be subject to an appeal therefrom

to the Superior Court of Guam. Such appeal shall be made pursuant to the provision of the Administrative Adjudication Law, Chapter II, Title XXV, of the Government Code of Guam.

H. PUBLIC NOTICES

a) All costs for public notices of intent to issue, to modify 401 WQC or for public hearings for 401 WQC shall be borne by the applicant.

b) For public notices of intent to issue or modify 401 WQC, publication shall be two consecutive days in a newspaper of general circulation on the dates specified by the Administrator.

c) For public notices of public hearing, publication shall be as specified in the Guam Administrative Adjudication Act. The public notice will be published in a local newspaper of general circulation as directed by the Administrator.

d) It is imperative that the public notice by published on the date(s) specified by the Administrator so that there are no delays in the processing of the 401 WQC request. In addition, when the public notice proof copy is edited by the applicant, it should be carefully checked for accuracy to avoid republication. An affidavit certifying publication will be required.

I. PUBLIC HEARINGS

a) Public hearings will be arranged (date, time, place) by the Environmental Review Section (ERS) staff and the hearing will be conducted by Guam EPA Board of Directors. In addition to the Guam EPA Board of Directors, as ERS staff member will be present to serve as a resource and the applicant will be requested to send a representative to attend the scheduled hearting to present testimony supporting the 401 WQC request.

J. CONTESTED CASE AND ADJUDICATORY HEARINGS

a) Contested case and adjudicatory hearings may be held as pointed in the "Procedure" portion of these guidelines.

K. SIGNATORY REQUIREMENT FOR SECTION 401 WATER QUALITY CERTIFICATION

1. (For municipal, state, federal, or other public agency)

   a) For Guam Environmental Protection Agency - The Administrator, as chief executive officer of the agency.

   b) In the case of Federal agencies, the chief executive officer of the agency, or the senior executive officer have having responsibility for the overall operations of a principal geographic unit of the agency.

2. (For a partnership or sole proprietorship)

   a) A general partner (partnership) or a proprietor (sole proprietorship)

3. (For a corporation)

   The President, Vice President, Secretary or Treasurer of the corporation and in charge of a principal business function, or one that performs similar policy or decision making functions for the corporation.

L. SECTION 401 WATER QUALITY CERTIFICATION APPLICATION FORMAT

FOR OFFICIAL USE ONLY
Application No._____
Date Received: _____

Prepared By: _____

Date: _____

SUBJECT: REQUEST FOR A SECTION 401 WATER QUALITY CERTIFICATION (WQC) FOR THE DISCHARGE OF DREDGE OR FILL MATERIAL

1.a. Applicant and Address: _____

b. Agent and Address: _____

2. Project Name and Location: _____

3. Associated Federal Permit: _____

Note: For the following items, be sure all items are completed. If there are incomplete items, the application will be returned. When references are made to supporting documents, it must identify the document, page number and paragraph. Four (4) copies of the supporting documents will be required. The applicant may use this Application Format as the application, it desired.

4. Provide for a description of the facility or activity, and of any discharge into state waters which may result from the conduct of any activity including, but not limited to, the construction or operation of the facility or activity. including the biological, chemical, thermal, and other characteristics of the discharge, and the location or locations at which such discharge may enter state waters.

   a. description of facility or activity: _____

   b. construction and operation of facility or activity: _____

   c. biological, chemical, thermal, and other characteristics of discharge: _____

   d. location(s) at which such discharge may enter state waters: _____

5. Provide a description of the function and operation of equipment or facilities or activities to treat wastes or other effluents which may be discharged, including specification of the degree of treatment expected to be attained.

   a. description of the function of equipment or facility or activity to treatment waste or other effluents.: _____

b. specification of the degree of treatment expected to be obtained:

6. Provide the date or dates on which the activity will begin and end, if known, and the date or dates on which the discharge will take place.

a. date(s) on which the activity will begin and end, if known:

b. date(s) on which discharge will take place:

7. Provide a description of methods and means being used or proposed to monitor the water quality and characteristics of the discharge and the operation of equipment or facilities employed in the treatment or control of wastes or other effluents.

a. description of the methods and means being used to monitor the water quality:

b. and characteristics of the discharge:

8. Provide a description of the methods and means being used

or proposed to monitor the water quality and characteristics of the discharge and the operation of equipment or facilities employed in the treatment or control of wastes or other effluents.

a. description of the methods and means being used to monitor the water quality: _____

b. and characteristics of the discharge: _____

c. and the operation of equipment: _____

9. Describe the classification of the territory's water and the associated recreational uses of the territory's water at the discharge and state whether the basic water quality criteria and the applicable water quality standards will be met.

a. describe the classification and recreational uses of the territory's water at the discharge: _____

b. statement whether the basic water quality criteria and applicable water quality standards will be met (if yes, complete item c. below): _____

c. provide a statement signed by the applicant that, "There is reasonable assurance that the activity will be conducted in such a manner which will not violate applicable basic water quality criteria and the applicable water quality standards." (Note: This will be one of the key elements in the determination to issue of Section 401 WQC).

10. Submit applicable plans, specifications and copies or citation of an Environmental Assessment or Environmental Impact Statement as it may apply.

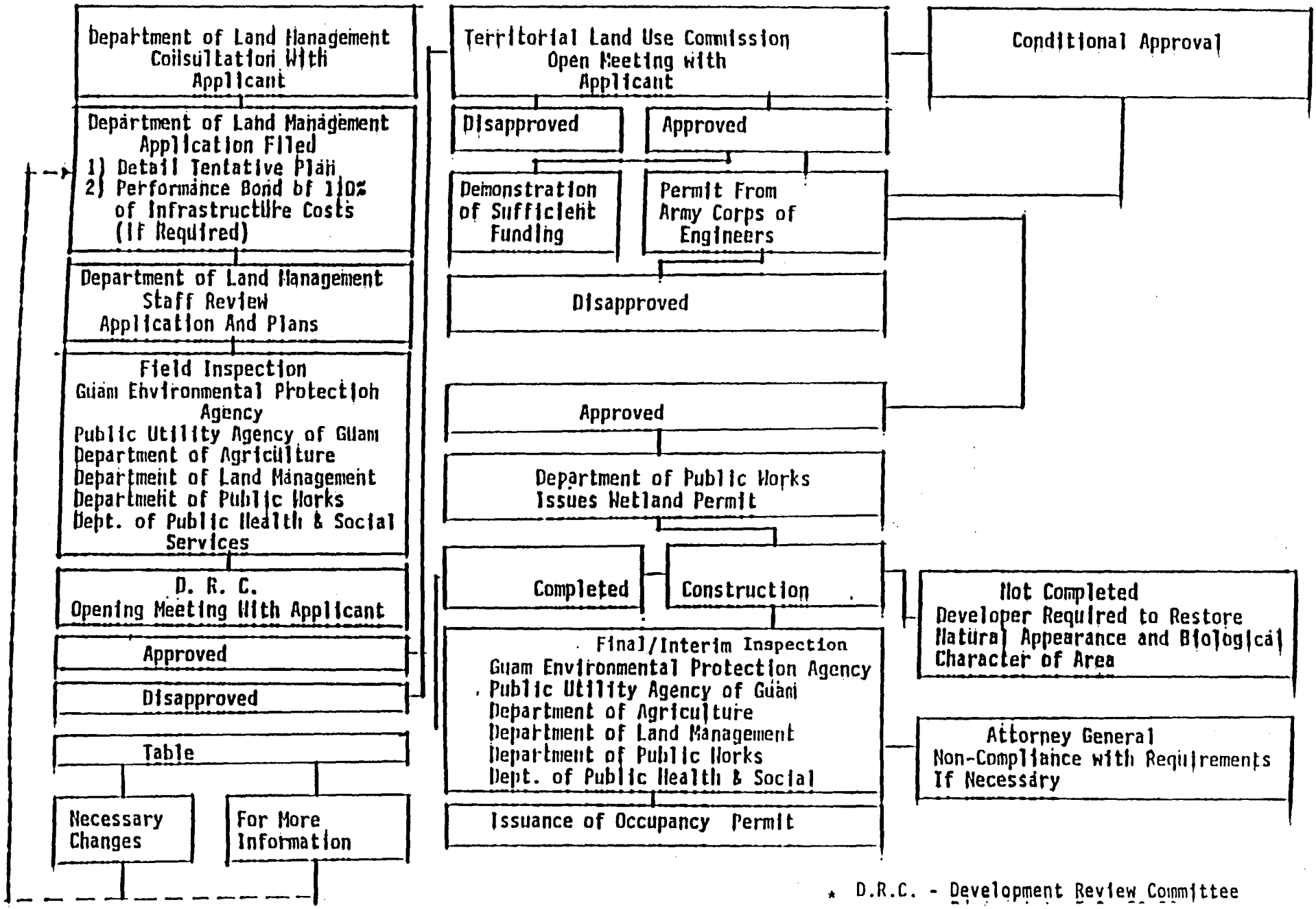
a. Submit applicable plans, specifications:

b. or copies or citation of an Environmental Impact Assessment or environmental Impact Statement as it may apply:

11. Explain any irregularities or unique features of the project:

WETLAND AREAS PROCEDURAL FLOW CHART

WETLAND AREAS
PROCEDURAL FLOW CHART



★ D.R.C. - Development Review Committee

2. The Committee shall be composed of representatives appointed by the respective agency directors from the following agencies or departments:

   A. Planning Division, Department of Land Management, the Territorial Planner of which shall be the Chairperson.

   B. Building Permit Section, Department of Public Works.

   C. Department of Public Works (other than Building Permits Section).

   D. Guam Environmental Protection Agency.

   E. Department of Parks and Recreation.

   F. Public Utility Agency of Guam.

   G. Bureau of Planning.

   H. Chamorro Language Commission.

   I. Department of Agriculture.

   J. Department of Commerce.

3. The Attorney General's Office shall provide assistance as deemed necessary.

4. Executive Order No. 78-2 and 85-10 are repealed in its entirety.

5. No project application shall be forwarded to the Territorial Land Use Commisssion/Territorial Seashore Protection Commission until such time as the Development Review Committee has had full opportunity to review the project to the satisfaction of constituent members. If, however, the committee review process exceeds three (3) months in duration, the Committee will justify its extended review in writing, explaining the reasons why the review will continue.

6. Should the TLUC/TSPC disagree with recommendations made by the Development Review Committee and contemplate action contrary to recommended action, then the TLUC/TSPC shall take no action on the proposed project immediately and shall instead provide justification for its disagreement, in writing, to the Development Review Committee. The Committee shall have two (2) weeks to respond, after which the TLUC/TSPC may take action on the proposal.

SIGNED AND PROMULGATED at Agana, Guam, this 25TH day of MAY 1990.

Joseph F. Ada
JOSEPH F. ADA
Governor of Guam

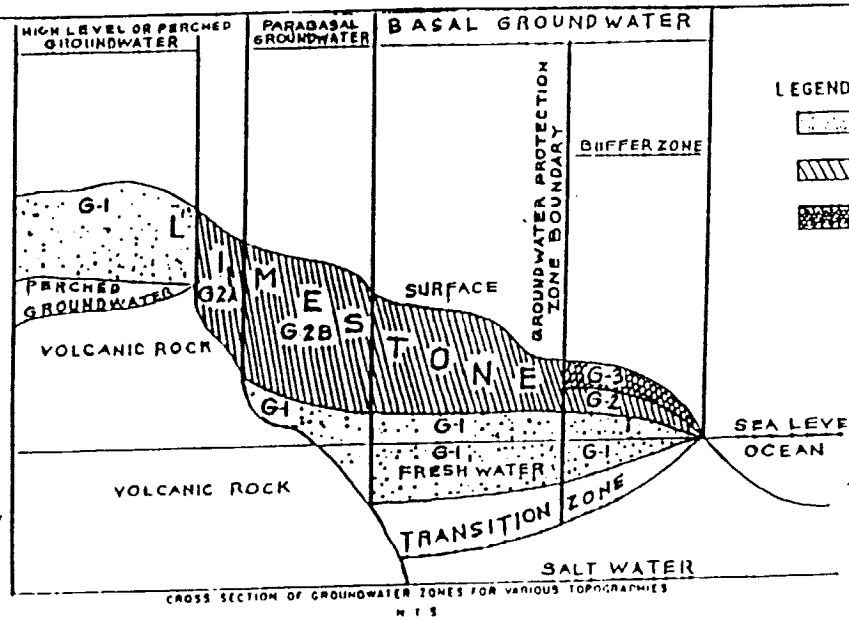
COUNTERSIGNED:

FRANK F. BLAS
Lieutenant Governor of Guam

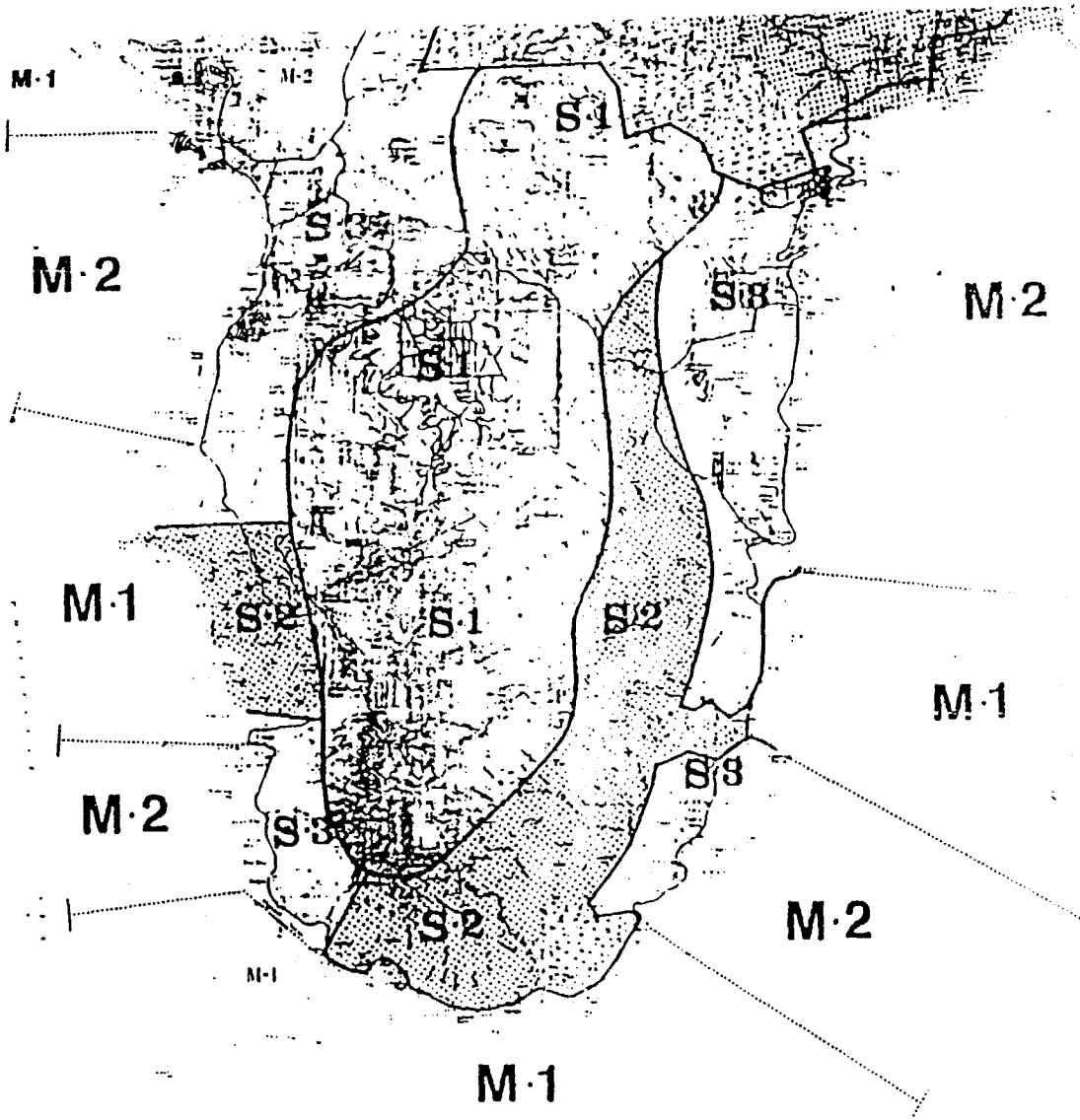
APPENDIX G

GUAM WATER CLASSIFICATION
(MASTER MAP)

GUAM WATER CLA



ASSIFICATION MASTER MAP



LEGEND

Guam Environmental Protection Agency

REVISED MARCH 1984

APPENDIX H

EXECUTIVE ORDER NO. 90-10

REQUIREMENTS FOR ENVIRONMENTAL IMPACT ASSESSMENTS FOR ALL TERRITORIAL LAND USE COMMISSION ACTIONS.

TERRITORY OF GUAM
OFFICE OF THE GOVERNOR
AGAÑA, GUAM 96910
U.S.A.

EXECUTIVE ORDER NO. 90-10

REQUIREMENTS FOR ENVIRONMENTAL IMPACT ASSESSMENTS
FOR ALL TERRITORIAL LAND USE COMMISSION ACTIONS

WHEREAS, Public Law 1-89 (as amended) established the Territorial Land Use Commission (TLUC) under the Department of Land Management and charged the TLUC with the review of all matters pertaining to the zoning of public and private land and development thereon; and

WHEREAS, there was established a Development Review Committee (DRC), charged with the responsibility of evaluating applications for zone changes and variances and reporting the DRC findings and recommendations to the TLUC prior to any action being taken on such applications; and

WHEREAS, commercial and residential development on Guam is presently occurring at an unprecedented rate; and

WHEREAS, many aspects of such development activities create impacts upon the environment of the Island of Guam; and

WHEREAS, the environmental impact of such development activities vary widely depending upon the nature, location and other factors unique to each case; and

WHEREAS, the Guam Environmental Protection Agency (GEPA), was created by the Guam Environmental Protection Agency Act (PL 11-191:10 GCA Chapter 45) and charged with the responsibility "... to provide a united, integrated and comprehensive territory-wide program of environmental protection and to provide a framework to fulfill that task."; and

WHEREAS, GEPA has the technical, legal and administrative capabilities to implement such a program; and

WHEREAS, such a program includes evaluation of the environmental impacts of any and all development activities in Guam.

NOW, THEREFORE, I, JOSEPH F. ADA, Governor of the Territory of Guam, by virtue of the authority vested in me by the Organic Act of Guam, do hereby order that:

1. The Territorial Land Use Commission (TLUC) shall not act upon any application for zone change or variance without an Environmental Impact Assessment (EIA) being submitted to the Guam Environmental Protection Agency (GEPA) and approved by the GEPA Administrator and the submission of a complete Environmental Impact Statement (EIS)

2. To be considered valid, an Environmental Impact Assessm shall, at a minimum, follow the following outline contain full information as described herein:

A. Describe the project and the setting
  1. Description of the project
    a. Purpose and justification of the project
    b. Location within the region
      i. maps
    c. What types of actions will the project entail
      i. construction
      ii. grading/filling
      iii. infrastructure development
    d. Necessary permits needed
      i. grading
      ii. air and water pollution
      iii. building
  2. Description of existing environment
    a. Physical condition
      i. soil
      ii. weather/wind
      iii. topography
    b. Existing infrastructure
      i. sewers
      ii. roads
      iii. water
      iv. electricity
    c. Biological
      i. plants
      ii. animals
    d. Land use
      i. urban/rural
      ii. existing surrounding uses
    e. Unique features
      i. archaeological/cultural

B. Alternatives compared and rationale for their selectio
  1. Alternative sites including proposed action wh the project could be located
    a. Site description including information requi in A2 above
    b. Reasons for elimination
  2. No action
    a. Reasons for elimination

C. Estimate the nature and magnitude of environmen changes caused by the activities of the project
  1. Description of impacts
    a. Description of impacts caused by construct activities during the development
    b. Description of long term impacts directly cau by the project or through secondary effects s as income distribution, population growth shifts, additional stress on services
    c. Description of cumulative impacts, those t come about due to multiple development in area
  2. Estimates of the magnitude of the impacts
    a. Estimate rate of change caused by the impact
    b. Estimate what irreversible or irretrieva commitments of resources will take place

D. Define criteria to be used in measuring significance
  1. Statutory criteria
    a. Relevant goals and objectives set out environmental laws
    b. Standards set forth in statute or regulation
      i. noise pollution
      ii. air

2. Derived criteria
   a. Technically derived measurements such as statistical measures
3. Cultural/Social/Political criteria
   a. Judgement of significance based on:
      i. criteria agreed on through political process
      ii. criteria based on input from affected groups
      iii. criteria based on local customs
      iv. criteria based on agreement through mediation

E. Evaluation of impacts relevant to site sensitivity
   1. Impacts estimated compared to measurement criteria
   2. Description of avoidable and unavoidable impacts

F. Mitigative measures — measures taken to ameliorate the impacts of the project on the environment
   1. Short-term impact mitigation
      a. Listing of short-term impacts
      b. Proposed mitigative measures
      c. Utility of proposed measures
   2. Long-term impact mitigation
      a. Listing of long-term impact
      b. Proposed mitigative measures
      c. Utility of proposed measures

3. The GEPA Administrator shall advise the TLUC, through the GEPA representative on the Development Review Committee (DRC), of the time period required for thorough review of such EIA documents, upon initial presentation of the application for rezoning or zone variance to the TLUC.

4. In the event that the Administrator of GEPA determines, during his review of any EIA submitted pursuant to the provisions of this Executive Order, that the proposed action of the applicant will result in a significant or adverse impact on the environment, the Administrator of GEPA shall require that an Environmental Impact Statement (EIS) be submitted by the applicant.

5. In the event that an EIS is required pursuant to the requirements of this Executive Order, the TLUC shall not act upon any requested zone change or variance until such EIS has been submitted to GEPA and approved by the Administrator of that Agency.

6. The Administrator of GEPA shall specify the content, format and method of submission of such EIS documents as are necessary to fulfill the purposes of this Executive Order, providing that such content, format and method are in accordance with commonly accepted professional standards with respect to Environmental Impact Statements.

7. The Administrator of GEPA shall not approve any EIS unless it contains satisfactory remediation provisions for any and all adverse environmental impacts, as determined in the EIA.

8. In the event that there is a change in ownership, management or direction of any development project, before, during or after construction on the project takes place, which project required an EIA or EIS under provisions of this Executive Order, the new owner, manager or director of such development project shall be subject to all provisions of such EIA or EIS in the same manner as the original owner, manager or director of such development project.

9. In the event that construction on any development project does not commence within one year of approval of an EIA or

APPENDIX I

TRIBUTYLTIN (TBT)

FRESH WATERS

In freshwater, the four-day average concentration of Tributyltin shall not exceed 0.064 ug/l more than once every three years on the average, and the one-hour average concentration shall not exceed 0.442 ug/l more than once every three years on the average.

MARINE WATERS

In marine waters, the four-day average concentration of tributyltin shall not exceed 0.010 ug/l more than once every three years on the average and the one-hour average concentration shall not exceed 0.356 ug/l more than once every three years on the average.

APPENDIX J

TABLE III

LIMITATIONS FOR DISCHARGES TO CATEGORIES
G-2a, G-2B AND G-3

TABLE III

Limitations for Discharges to Categories G-2 and G-3

Groundwater Category	Fecal Coliform	COD (mg/1)	pH	Chlorides (mg/1)	Ortho-phosphate (PO_4-P) (mg/1)	Nitrate-Nitrogen (NO_3-N) (mg/1)	Oil and Grease (mg/1)
G-2a	20/100 m/1	20	6-10	250	10	5	0.005
G-2b	200/100 m/1	20	6-10	250	10	5	5
G-3a (<3,000 gpd)	-(2)	300	6-10	500(1)	25	30(3)	5
G-3b (>3,000 gpd)	400(4)/100 ml	50	6-10	500(1)	10	5(3)	5

(1)outside of the Groundwater Protection Zone this limit is increased to 2000 mg/1

(2)concentrations to be established on a case-by-case basis by the Agency

(3)for animal feedlot operations higher discharge limitations may be permitted on a case-by-case basis

(4)daily average is based on a minimum of 15 samples per month